

AFIT/GTM/LAL/99S-1

THE PRIVATIZATION OF THE AEROSPACE  
GUIDANCE AND METROLOGY CENTER AT  
NEWARK AIR FORCE BASE

THESIS

Richard H. Fillman Jr., Captain, USAF

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THESIS

Presented to the Faculty of the Graduate School of Logistics  
and Acquisition Management of the Air Force Institute of Technology

Air University

Air Education and Training Command

In Partial Fulfillment of the  
Requirements for the Degree of  
Master of Science in Transportation Management

Richard H. Fillman Jr., A.S., B.S.

Captain, USAF

September 1999

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## **Acknowledgements**

This thesis has been an enlightening experience for me on the in learning what graduate research is all about. This study has also reinforced to me if there is an “agenda” within the government, it will most likely get done no matter what the “costs” are. I thank my thesis advisor, Dr. William Cunningham, for allowing me to pursue this study with a “laissez-faire” approach. Dr. Craig Brandt, my thesis reader, kept me on-line and with my inexperience in writing formal documents - thank you. I would also like to mention without the help of Mr. Bill Pitts - Ogden ALC, Mr. Jerry Pratt - DCMC Dayton/Newark, Mr. Tom Gorman - JDMAG, and Ms Jean August at HQ AFMC Historian Office for access to the AGMC close-out history. I would have not been able to complete this thesis work without all there help, thank you for providing timely feedback and the “ever so crucial hard” data.

I would also like to extend my thanks to the AFIT library staff for they endured me “dominating” the computer in the special services room the entire time I worked on this thesis. Also, the research assistance provided by the reference desk personnel was second to none.

Finally, I would like to thank my fiancée Donna Gurnick for listening to me and supporting me through the entire thesis process. Thank you for putting up with me while I worked on my thesis over the past year.

Rich Fillman

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### **Abstract**

The Aerospace Guidance and Metrology Center (AGMC) at Newark AFB was privatized-in-place as a result of the 1993 BRAC process. This was a first of a kind for the DoD repair depot system. The justification was too much excess depot capacity and by closing Newark the Air Force would rid itself of this excess capacity and obtain savings by privatizing the repair workload.

This thesis concentrates on whether excess capacity at AGMC was as large as it was identified and if cost saving had materialized at the depot since the privatization. To determine how well the depot repairs were accomplished, performance metrics were examined before and after the privatization occurred. With the trend of privatization in the DoD depot system, many depot policy changes have occurred since the AGMC privatization.

This research suggests the justification presented for closing Newark and privatizing AGMC was not accurate, the costs to operate the privatized depot is has cost the taxpayers \$70 million more then if the depot would have remained organic, and how recent legislative changes are leading to a preference for private industry to perform all depot level maintenance.

# THE PRIVATIZATION OF THE AEROSPACE GUIDANCE AND METROLOGY CENTER AT NEWARK AIR FORCE BASE

## I. Introduction

### General Issue

On 12 March 1993, the Secretary of Defense submitted a recommendation that Newark Air Force Base (AFB) be for slated for closure under provisions of the 1993 Base Realignment and Closure Commission (BRAC). On 2 July 1993, the President approved the recommendation, which initiated the closing of Newark AFB and the privatization of the Aerospace Guidance and Metrology Center (AGMC).

The Aerospace Guidance and Metrology Center, at the time, was the smallest of the Air Force's depot maintenance facilities. The Secretary of Defense justified the closure to support the significant reduction in force structure. The reduction in force and infrastructure had resulted in a culmination of excess depot maintenance capacity of 8.7 million Direct Product Actual Hours (DPAH) in 1993, or about 30 percent excess capacity (Fisher, 1996:20). The closure of Newark AFB was expected to reduce the Air Force 8.7 million hours of excess depot capacity by 1.7 million DPAH. Additionally, this was consistent with Office of the Secretary of Defense guidance to reduce excess capacity, economize depot management, and increase competition and privatization (Defense Base Closure and Realignment Commission, 1993:81).

The exact language written in the final BRAC recommendation stunned the local communities of Newark and Heath. The BRAC recommendation included the closure of Newark AFB along with the AGMC workload to be moved to other depot maintenance facilities to include the private sector. There was no reference in the recommendation to possibly privatize in place the AGMC workload. The community response to this decision was immense to which they argued the maintenance facilities at Newark AFB were one-of-a-kind and could not be reproduced at any other location. Ironically, studies conducted by the Air Force in 1990 and 1991 for a previous round of base closures identified numerous difficulties that kept Newark AFB from being recommended for closure in 1991 (Fisher, 1996:14). At stake for the local communities were the jobs of 1,679 employees and a \$200 million economic impact.

To compound the situation, unclear guidance from several governmental offices added turmoil to the closure decision. The Secretary of Defense recommendation specifically included privatization in place. The Acting Secretary of the Air Force outlined four possible scenarios for privatizing the work at Newark: sale of the facilities to a contractor; transfer the property to the state of Ohio with provisions that the facility be used for Air Force work; conversion of the facility to a government-owned contractor-operated (GOCO) facility; and transfer property and workload to an employee buyout group (Fisher, 1996:20-25). In the end, the BRAC recommendation did not include wording for privatization in place.

However, the day after President Clinton approved the BRAC recommendations, he announced a Five-Point Plan, a federal initiative to help communities recover from base closures. This plan eventually became the Base Closure Communities Assistant Act

commonly referred to as the Pryor Amendment. This legislation established a new property transfer mechanism that would enable the local community to aggressively pursue privatization in place (Fisher, 1996:152).

Headquarters United States Air Force later issued Program Action Directive 94-01, which provided guidance for base closures. This directive stated that, "the objective of the workload transfer plan would be to maximize privatization in place at Newark (Fisher, 1996:55)."

The responsibility to close Newark and to seek out the merits of a privatization in place plan was placed upon Headquarters Air Force Materiel Command (AFMC) Wright-Patterson AFB, Ohio. To evaluate the feasibility of privatization in place, the Workload Transition Program Office (WTPO) assumed the responsibility developing an acquisition strategy, creating a request for proposal, and managing the source selection (Fisher, 1996:60). After an extremely complicated and labor intensive analysis of proposals submitted for the privatization, it was determined that the privatization proposals were satisfactory to meet cost concerns. On 15 December 1994 AFMC announced that it had awarded contracts to Rockwell OEM consortium (Boeing later acquired Rockwell) and Wyle Laboratories for the Newark depot workloads (Fisher, 1996:116). This decision sealed the fate of where the depot workload would be located and the future of the employees of the AGMC.

However, there remained much skepticism on whether the cost figures for privatization were accurate and if privatization would actually cost taxpayers more than if Newark AFB continued to operate as a government facility. On 1 October 1996 Boeing

and Wyle Laboratories officially took over the depot operations from the Air Force which had operated the complex since 1952.

### **Statement of Problem**

On 1 October 1996 Boeing North America and Wyle Laboratories took control of the former Newark AFB Aerospace Guidance and Metrology Center depot operations. Amid skepticism that privatization of the depot was not cost effective, Congressional leaders requested a review of the interim costs associated with the Boeing Guidance Repair Center (BGRC). The General Accounting Office (GAO) reviewed the cost comparison of the previous Aerospace Guidance and Metrology Center and the current operating costs of the Boeing Guidance Repair Center. The results of the analysis estimated that the first full year of operations at BGRC would likely cost \$14.1 million more than it would have if the facility continued to operate in its previous capacity. This represents a 16 percent cost increase (GAO/NSIAD-98-35).

This raises the initial question of did the Air Force make a mistake in pursuing privatization of depot operations at Newark? In a previous 1994 GAO report concerning the cost growth of the privatization, it was identified that post-privatization operation costs could exceed the cost of current Air Force operational costs and reduce or eliminate the projected savings. This in turn could increase the payback period as much as over 100 years (GAO/NSIAD-95-60, 1995:3). This report clearly indicated the costs associated with privatization of the Newark depot could outweigh the benefits of reducing the Air Force organic depot capacity. The statement, "the savings anticipated from closing AGMC were not the most important considerations and the Air Force might

privatize AGMC even if that involved increased costs," by the Acting Secretary of Air Force Donley, emphasized the desire to remove the Newark depot from the books of the Air Force.

Closing AGMC also created another dilemma, for AGMC was the Air Force sole source for the repair of inertial guidance and inertial navigation systems. The entire workload of AGMC was considered "core work" and privatization would violate not only the concept of core workloads but also public laws concerning the 60/40 rule (Fisher, 1996:34). Looking at this situation from the outside one could suggest there were political powers interested in seeing the closure of Newark AFB and the privatization, whether in place or at other organic or private facilities, of the depot maintenance to become reality.

Why was so much effort utilized in continuing with privatization of the Newark depot when cost analyses by the Air Force and GAO varied greatly? Could it be from increasing political pressures for the services to reduce depot capacity, cut spending, and to increase interservice work as suggested by the BRAC Commission (Fisher, 1996:36)? It could also have been known that BRAC 95 would target the larger Air Logistics Center (ALC) depots such as Sacramento ALC at McClellan AFB and San Antonio ALC at Kelly AFB for closer and privatization and that Newark could be used as a "privatization template."

### **Justification and Objectives**

Several theses have already been completed on the depot privatization at Newark AFB. These theses were accomplished during the time period leading up to the

privatization of the Aerospace Guidance and Metrology Center at Newark AFB and focused on several key issues involved with the privatization of the repair depot. Now, three years after the privatization process has been completed at Newark, it is important to research if the depot privatization has met the goals that initiated the closure of Newark and the privatization of the depot workload.

The objective of this research is to determine if the privatization of Newark AFB's Aerospace Guidance and Metrology Center has successfully met the goals that initiated the privatization. The definition of successful is obviously very objective and it usually depends on the view it is taken from. In this case study, success will focus on the reduction of excess depot capacity and overall cost. Additional objectives of this research will be to examine if depot operating processes or procedures have changed as a result of the Newark depot privatization and how have performance metrics changed since a private contractor has taken over the depot operations.

### **Investigative Questions**

**Investigative Question One.** How does the privatization of the Aerospace Guidance and Metrology Center at Newark AFB reduce the excess depot capacity within the Air Force? The justification that both the Air Force and BRAC committee presented in the closure recommendations was the 1.7 million hours of excess depot capacity at Newark along with the overall 8.9 million hours of excess depot capacity Air Force wide.

**Investigative Question Two.** Is the contractor operated Boeing Guidance Repair Center costlier than when the repair depot was operated by the government? If there was a cost increase, what was it and what has been done to minimize or eliminate the excess



costs? The whole premise on closing Newark AFB and privatizing the depot workload was to save money to be used in modernizing Air Force weapon systems.

**Investigative Question Three.** How did the performance metrics of the depot maintenance repairs change under contractor operations? The “who performs better” debate between organic depot operations and private contractor depot operations have been in question over recent years. Analyzing the performance metrics may shed some light on this area of debate.

**Investigative Question Four.** How did depot maintenance policy or procedures change since the privatization of the Aerospace Guidance and Metrology Center? Since Newark was the first Air Force depot to be privatized in place, many changes in the overall depot system policy may have occurred.

### **Scope and Limitations of the Research**

This thesis will specifically focus on the depot repair operations at the previous government-controlled Aerospace Guidance and Metrology Center at Newark AFB and the current contractor repair operations at the Boeing Guidance Repair Center located at the Central Ohio Aerospace and Technology Center (the former Newark AFB).

With the reduction in budgets across all services, “costs” have been the determining factor on what remains organic to the Air Force and what activities are outsourced or privatized. It is very important not only to national defense but also to the taxpayers that money is spent where you get “the best bang for the buck.” This study will include a focus on whether the costs of contractor operation of the repair depot are more than when the government operated it. It is important to note that when estimated costs

are used as a basis of cost and when actual costs are more, one must research if the initial cost estimates excluded costs that are included in the actual costs.

The depot repair system was originally developed with inherent excess capacity to handle wartime surge capacity requirements. Notwithstanding, the Air Force's goal of reducing excess depot capacity through privatization must first reduce the capacity requirements, then privatize to realize cost savings. This research will examine if the excess capacity of the Air Force depot systems have been reduced through the Newark privatization.

Closing Air Force bases across the United States has traditionally been a painstaking process for all parties involved. United States Senators, United States Representatives, and the local/state politicians whose governing area is affected by the closures will usually have insight to how these decisions are made. It is practically impossible to research the "behind the closed door" political maneuvering that occurs when such decisions are to be made. However, the justifications that were presented in recommending the closure of Newark AFB and the privatization of the repair depot can be researched.

The privatization of the Aerospace Guidance and Metrology Center at Newark AFB was the first Air Force depot to be privatized. It is vital for future depot privatization considerations that repair quality and timeliness is the same as it was under governmental controls. A focus on repair performance metrics is imperative not only for contractor award fees but also to establish private firms can operate a depot efficiently and effectively.

The emphasis of this thesis is concentrated on the traditional depot repair workloads associated within the Air Force depot system. Accordingly, research into the metrology and calibration workloads, awarded to Wyle Laboratories, which were part of AGMC was not accomplished. However, the cost analysis comparisons of AGMC/BRGC include Wyle Laboratories cost data to make an overall cost comparison.

## **II. Background of the Issue/Review of the Literature**

### **Chapter Overview**

This chapter presents reasons on why the Air Force needed force modernization and how the Base Realignment and Closure (BRAC) process played a major role. Outsourcing and privatization will be examined in how these processes engaged in the force modernization process. The chapter concludes with an overview of outsourcing and privatization issues.

### **Force Modernization**

With the fall of the Soviet Union and the Berlin wall, the United States won the “Cold War” and the peace dividend of numerous years of robust defense spending paid off. The United States no longer faces a long and protracted conflict with a rival superpower. However, this left the US military without a visible threat and political pressure from Washington DC to reduce the federal budget focused now on military budgets. The need for such a large military force is often the topic of discussion among the nation’s political leaders. This ultimately led to larger budget cuts across the board for all the services. In addition to overall budget cuts, between 1985 and 1996 the procurement budget declined by 68 percent, in real terms, funding for modernization programs were at very low levels (Improving the Combat Edge Through Outsourcing, 1996:2).

The US military was able to maintain the average age of most weapons systems even though fewer systems were bought. Discarding the oldest equipment and

redistributing newer equipment to a smaller force structure has been the theme for the past several years. However, this "patch" for not receiving modern equipment will affect the military in an adverse way in future years. New technology is upon us that can dramatically increase the capabilities of our military forces. The DoD realized funding must be increased for procurement to ensure the continued technological superiority of the US military (Improving the Combat Edge Through Outsourcing, 1996:3).

The DoD's initial answer to meet the challenge of a reduced budget started with reducing infrastructure costs through the Base Realignment and Closure (BRAC) process. A total of 451 military installations and activities were closed or reduced in size through the BRAC process to date. DoD estimated the results of the four rounds of base closures and realignments produced net savings of \$14 billion and when fully implemented will provide annual savings of \$5.7 million (GAO/NSIAD-99-36, 1998:4). Coupled together with the BRAC process was a massive reduction in personnel. Personnel levels in the Air Force have been reduced by 39 percent since 1986 and plans are for another 5 percent by FY03 and the U.S. military as a whole has been reduced by 20 percent over the past five years (Marley, 1998:3). Currently the Air Force is at a post WWII low in personnel strength of 371,577 and is expected to reduce by another 12 percent by 2003 (Pulley, 1998:3).

This still was not enough to meet the needs necessary for force modernization and readiness. According to the Secretary of Defense, if money is not saved by reducing unnecessary infrastructure and cutting the size of the force, the services will not have the money to develop new weapons (Maze, 1998:6). On February 26, 1996, Deputy Secretary of Defense John White issued a memorandum to all Service Secretaries to

make outsourcing and privatization a priority within their department (Improving the Combat Edge Through Outsourcing, 1996: Appendix 2). Consequently, a systematic review of all infrastructure support activities was conducted to determine where competitive forces could improve overall performance at a lower cost. The outsourcing and privatization of these activities have offered a mechanism to generate the needed savings for force modernization.

The questions many politicians ask is, "Why do we need to modernize the military? Did not we prove we were superior in Desert Storm?" Without modernization the Air Force will not have the warfighting requirements to meet the two major regional conflict strategy in the very near future (Arana-Barradas, 1998:1). By FY99 the average Air Force aircraft will be 20 years old, and older aircraft require more time, parts, and people to maintain in flying condition. As an example, the F-15 fleet averages 11 years old and the KC-135/B-52 average 35 years old. General Hawley (1997:1) summarized the greatest modernization challenge in the years ahead may be to keep the F-22 funded and on track to full deployment by the end of the first decade of the 21st century.

According to General Ryan, to stay on top as the preeminent air and space power in the world, the Air Force must address the modernization of weapon systems (Air Force News Service, 1998:1). The F-22, Joint Strike Fighter, Airborne Laser, Space Based Infrared Systems, and the Evolved Expendable Launch Vehicle are the weapon systems modernization projects the Air Force is funding (Dorsey, 1998:1).

## **Outsourcing and Privatization**

Outsourcing and privatization are not new concepts to the military. Since 1955 federal agencies have been encouraged to obtain commercially available goods and services from the private sector through outsourcing (GAO/NSIAD-98-62, 1998:2). In 1966 the Office of Management & Budget issued Circular A-76, which establishes policy for government's performance of commercial activities. In 1979 a supplemental handbook was added that included procedures for competitively determining whether commercial activities should be performed in-house, by another federal agency through an interservice support agreement, or by the private sector. The latest version reduces administrative activities of performing A-76 studies and makes the cost comparison between private sector proposals and government estimates more equitable (GAO/NSIAD-98-62, 1998:19). The goal of the Air Force outsourcing and privatization process is four-fold: to generate savings for force modernization (new weapon systems); to improve performance, quality, and efficiency; to focus on core activities; and to sustain readiness (Cameron, 1998).

Outsourcing is not a new term for US companies either for they have been outsourcing activities for years. Companies report that outsourcing provides them their desired benefits; enables a focus on core competencies; improves service quality, responsiveness, and agility; promotes access to new technologies; and employs more efficient business practices. These benefits are very similar to what the Air Force developed as their outsourcing and privatization goals. A study by the Dun & Bradstreet Corporation and The Outsourcing Institute estimates that approximately \$100 billion of outsourcing occurred in 1996 and is estimated to top \$150 billion by 1998 (The

Outsourcing Institute, 1999:1). A recent Anderson Consulting survey found that more than 90 percent of corporate CEOs expected to be involved in strategic outsourcing by the year 2000. The structure of choice in today's business world is a web or network, in which companies rely on partnerships, cross investments, and strategic alliances to enter new markets. Leading firms such as Microsoft and Cisco systems no longer create new divisions in distant fields. Instead, they form strategic partnerships or other relationships, such as Microsoft's investment in Comcast as part of its strategy for gaining access to the cable market (McInerney, 1998:80).

Outsourcing and privatization offers the prospect of lowering costs and improving performance across a wide range of support activities. The DoD's total budget operations and support activities in FY96 were \$93 billion. The lofty savings estimate of 31 percent on outsourced and privatized activities has DoD leadership eager to compete out as many support activities as possible. The goal is to reduce costs through the outsourcing and privatization initiatives and to have a net gain in savings and performance. Activities will only be considered for outsourcing or privatization if they meet three conditions. First, private sector firms must be able to perform the activity and meet the military warfighting mission. No activities will be considered for outsourcing which constitutes core capabilities (fighters, tanks, ground forces, etc.). Second, a competitive commercial market must exist for the activity. Market forces usually drive organizations to improve quality, increase efficiency, and reduce costs. Third, outsourcing the activity must result in best value for the government and therefore the U.S. taxpayer (Improving the Combat Edge through Outsourcing, 1996:3). The Air Force is vigorously pursuing outsourcing and privatization opportunities throughout the support infrastructure. An outsourcing



initiative named "JUMP START" was created in November 1996 to evaluate potential support activities to be outsourced. The popularity of outsourcing is apparent from the total of 1,800 A-76 studies that have been accomplished in the past three years. The outsourcing of aircraft maintenance at Columbus AFB, Mississippi; Altus AFB, Oklahoma; Holloman AFB, New Mexico; and Reese AFB, Texas has already yielded significant savings. The outsourcing of base operations at Tyndall AFB, Florida and Wright Patterson AFB, Ohio is currently in planning as well as that of base supply activities at Edwards AFB, California (Air Force Congressional Issue Papers, 1998:43). Current interest in privatization includes military family housing and on-base utilities as the two main target areas.

#### **Push for Outsourcing and Privatization**

Why the push on outsourcing and privatization? The military performs a wide variety of support activities in-house that are readily available in the local communities' private sector. Private sector organizations have market forces working against them that require more cost effective and efficient performance than competitors. If a private organization can do the same activity that a military organization does cheaper and more efficiently, it only makes sense to have them perform this activity. Examples of these activities are office and administrative services, automatic data processing, food services, industrial shops and services, maintenance, overhaul, repair and testing, management of support activities, and audiovisual products and services. The only activities that would not be outsourced or privatized are those activities that are core competencies of the military such as command of military organizations, management and supervision of

DoD personnel, criminal investigations, revenue disbursements, and control of federal funds (Commercial Activities Program, 1998:2-3).

The Air Force manages the outsourcing efforts within the Air Force Commercial Activities (CA) Program. The process of outsourcing or privatizing an activity starts with an A-76 study. The Office of Management and Budget Circular (OMBC) A-76, Performance of Commercial Activities, lays out the policy and procedures that must be followed in conducting cost comparisons. In competing a depot repair workload against the organic and private sectors, the Depot Maintenance Council's Cost Comparability Handbook (CCH) lays out the procedures in making an award determination.

### **Privatization Defined**

Privatization is the transfer of control of a support activity entirely to a private sector. The government divests itself of the entire process including all assets. The government specifies the specific quantity, quality, and timeliness requirement; however, it has no control over the operation of the activity. Another key aspect is that the government may not be the only customer to the service provider. An example of privatization could be in vehicle maintenance. If a base privatized a vehicle maintenance activity, they may simply take their vehicle to the local General Motors or Ford dealership and have the vehicles worked on. Currently there are two areas in the Air Force that have plans to be privatized, military housing and base utilities. The Air Force awarded a \$42.6 million lease to Landmark Organization of Austin, TX to design, construct, own, operate, and manage at its expense a new 420-unit rental housing development to serve enlisted families at Lackland AFB. Rent for the housing units will

be capped at the basic allowance for housing (BAH) for the respective enlisted personnel. Ground breaking occurred in the fall of 1998 with a fall 2000 completion date. To date the construction costs are estimated to be 11.7 million less than if the housing was constructed through the normal Military Construction (MILCON) process (Dishner, 1999:1). Privatization-in-place refers to privatizing the activity at the same location as it was before. In the case of the Aerospace Guidance and Metrology Center, the workload repair remained the same facility and location.

### **Outsourcing Defined**

Outsourcing is the competing of support services to public and private industry. The government retains full ownership and control over the operation of the services provided. The primary method to follow in outsourcing is to compare the cost of in-house to contractor performance cost to determine the most effective and efficient mode of operation. An example of outsourcing, using a base vehicle maintenance activity: If a vehicle maintenance activity were outsourced, the contracted firm would use government facilities and equipment, as designated by the contract requirements, but service only government vehicles.

### **Reasoning for Outsourcing/Privatization**

Accelerated reengineering benefits are one of the most valuable results of outsourcing or privatization. Reengineering aims for improvements in critical performance measures such as cost, quality, quantity, and timeliness. The need to increase efficiencies in non-core activities can come in conflict with the need to invest

efforts into the core competency activities. As non-core support activities are continually placed on the “back burner”, these activities become less efficient and non-productive. By outsourcing these non-core activities to a world class provider, an organization (DoD) can possibly reap the benefits of reengineering. Access to world class capabilities is another result of outsourcing or privatization. World class service providers make extensive investments in technology, methodologies, and personnel. They gain expertise by working with and competing against market forces. The combination of specialization and expertise gives customers a competitive advantage and helps avoid the cost of chasing technology. Cash infusion is one of the most important reasons that the DoD is advocating outsourcing and privatization. Outsourcing and privatization often involve the transfer of assets to the service provider thus providing significant cash infusion to the customer. Outsourcing and privatization will free resources for other purposes. Every organization has a limit on available resources (The Outsourcing Institute, 1999). In the case of the DoD, the freed up resource of personnel was actually made into a manpower reduction to capitalize again on reducing costs. If an activity were difficult to manage or out of control, outsourcing would be an option for addressing this issue. Outsourcing and privatization will improve an organization’s strategic focus. By devoting energy to areas that are not the military’s true expertise, focus can be concentrated on the core competencies. Outsourcing and privatization can also make capital funds available. It is hard in today’s tight budget to justify capital investments in non-core activities.

## **Navy Depot Outsourcing**

A BRAC 93 recommendation resulted in the closing of the Alameda Naval Aviation Depot, California. The maintenance workloads performed at their facilities were redistributed to remaining depots operated by the Navy and other services. It has been determined in a GAO report to the U.S Senate (GAO/NSIAD-98-10BR. 1998:1) the transfer of the Alameda's depot maintenance to other depots was not accomplished in the most effective manner. Production delays, increased costs, and an impact on customer unit readiness resulted. The delays and increased costs were attributed to a variety of factors including competing priorities between the gaining and losing facilities and unidentified equipment and retooling requirements. Lack of spare parts, outdated technical data, personnel and equipment certification requirements, and a shortfall in skilled workers also contributed to a cost overrun. Lessons learned from this have been shared among services that are also outsourcing depot maintenance.

## **Marine Corps Outsourcing**

Time Mirror Training in support of the U.S. Marine Corps Recruiting is a success story in outsourcing. Time Mirror Training, a world-class provider of training and consulting solutions in the area of sales, leadership, and customer service has provided the USMC a valuable service. Learning International, the performance arm of Time Mirror Training, assists the USMC recruiting command by teaching its Professional Selling Skills System (PSSS) to the Marine Corps recruiters. They also performed the train-the-trainer function in instructing recruiters how to teach PSSS. A very successful "Transformation" television advertising campaign was augmented by Learning

International. Efforts to move a manual system to laptop computers so recruiters can more efficiently manage their work process, daily schedules, and routinely needed information to do their daily jobs are in the works. Major General Kimp, Commander of the Marine Corp Recruiting command, stated that the results of Learning International is a meritorious unit commendation the unit received for exceeding recruiting requirements for 24 consecutive months (Learning International, 1998:1-3).

### **Navy Outsourcing Problem**

Outsourcing in the Navy was plagued with personnel difficulties in 1997. In a GAO report (GAO/NSIAD-98-107, 1998:2) to Congress, it was identified that outsourcing was impacting rotational assignments in the Navy. Sea-to-shore rotations are set to four years at sea for every three years on shore. Actual sea-to-shore rotations have ranged up to five years at sea for every three years on shore. As of February 1998, the number of sea billets exceeded shore billets by more than 40,000. Outsourcing of support activities on shore has made a direct effect on the years sailors spend out at sea. Several Navy A-76 studies for FY98 focused on eliminating military billets in areas where rotational shortages exist for personnel returning from sea duty. As a result, the Navy decided not to begin some of these A-76 studies. According to OMBC A-76, government personnel must perform functions that are closely related to the exercise of national defense and that any warfighting capability. DoD has released guidance that one such function are the positions that are required to support rotational requirements for active duty enlisted military personnel returning from overseas assignment or sea duty (GAO/NSIAD-98-107, 1998:6).

## **New Weapon Systems to the Private Sector**

In March 1998 a GAO report identified a DoD trend in shifting depot workload on new weapon systems and major upgrades to private sector contractors (GAO/NSAID-98-8, 1998:2). This condition reflects the DoD's shift from past policies and practices, which generally preferred the organic public sector. The important underlining dilemma caused by this concerns the workload at existing DoD depot facilities. The workload at existing depots will eventually decline over time with the phase out of major weapon systems. Combined with the trend in awarding new weapon systems to private contractors, this will cause an increase of excess capacity at the remaining DoD depots. If this trend continues, the remaining organic depot operations DoD wide will increase in excess workload capacity and may be in jeopardy of possible closure recommendations. This is important to note, because excess workload capacity was the justification used to recommend closure of Newark AFB and the privatization of the repair depot.

## **Privatization-in-Place Plans Are Costly While Excess Capacity Exists**

In 1993 the justification to close Newark was the 1.7 million hours of excess depot capacity at the Aerospace Guidance and Metrology Center and 8.9 million hours of excess Air Force depot capacity. The problems of excess capacity have been exacerbated in recent years by reductions in military force structure and related weapon system procurement; changes in military operational requirements due to the end of the Cold War; increased reliability, maintainability, and durability of military systems; increased maintenance performed in operational units; and increased privatization of depot

maintenance workloads (GAO/NSAID-97-13, 1996:3). Table 1 (GAO/NSAID-97-13, 1996:7) illustrates the excess capacity at Air Force depots in 1996.

The 1995 BRAC process identified the Sacramento Air Logistics Center (ALC) at McClellan AFB and the San Antonio Air Logistics Center (ALC) at Kelly AFB to be closed and consolidated with the Air Force remaining depots and private contractors. However, the President forwarded the recommendation to Congress to privatize-in-place

**Table 1. Workload Capacity in Direct Labor Hours**

Depot	Maximum Capacity	Actual Workload	Excess Capacity	
			Hours	Percentage
Oklahoma City	12,863,153	7,058,083	5,805,070	45
Ogden	9,004,515	5,146,999	3,857,516	43
San Antonio	15,219,752	6,372,607	8,847,145	58
Sacramento	10,226,981	5,509,051	4,717,930	46
Warner Robins	9,912,789	7,375,889	2,536,900	26
<b>Total</b>	<b>57,227,190</b>	<b>31,462,629</b>	<b>25,764,561</b>	<b>45</b>

or in the local community, the ALCs. This recommendation was based on the potential effects on the local communities and Air Force readiness. After further study by the GAO it was reported that privatization-in-place does not substantially reduce infrastructure costs and excess capacity. Privatization-in-place simply moves the excess capacity to the private sector. The GAO stated the privatization-in-place of the Sacramento and San Antonio depots does will not reduce the large amount of excess capacity in the Air Force depot system (GAO/NSAID-97-13, 1996:2).

As cost analysis and reports on the Sacramento and San Antonio ALCs surfaced, the logical choice became clear to consolidate a majority of the workloads to the



remaining Air Force depots. The nuclear weapons workload moved from San Antonio ALC to Ogden ALC and was completed in December 1998; the F100 Core engine workload move to Oklahoma City ALC is to be completed in 1999; C-5 workload was awarded to Warner Robins ALC in October 1997 and transition of the workload was completed August 1998 (Defense Depot Maintenance Council, 1997:15). The F-15 workload transition from Sacramento ALC to Warner Robins ALC was completed 5 August 1998. A consolidated workload package that includes the KC-135, A-10, hydraulics, electrical accessories, instruments, and manufacturing was award to Ogden, which was in-turn subcontracted to Boeing (Defense Depot Maintenance Council, 1997:16).

#### **Navy Depot Maintenance**

The 1995 BRAC process recommended closing the Navy's Louisville depot and transferring the workload to several other DoD facilities. The city of Louisville proposed the depot to be considered for privatization-in-place. After a second look and some previously unforeseen transfer costs, privatization-in-place was determined it would be more cost effective for repair of the depot workload. Consequently, the workload, equipment, and facilities were transferred to the private sector. After several years operating under contractor control, the privatization of the Louisville depot facility did not appear to be the most cost effective approach. It was identified that the Norfolk Naval Shipyard and Crane Naval Surface Warfare Center could have received the Louisville workloads due to 8.9 million hours of excess direct labor capacity at the Norfolk facilities (GAO/NSAID-97-52, 1997:4).

## **Core Logistics Capability**

The most basic of the legislative mandates governing the performance of depot-level workloads is 10 U.S.C. 2464, which provides for a core logistics capability to be identified by the Secretary of Defense and maintained by DoD unless the Secretary claims DoD performance as not required for national defense. Traditionally, core was defined as the capability, including personnel, equipment, and facilities, to ensure timely response to a mobilization, national contingency, or other emergency requirement. The composition and size of this core capability are at the heart of the depot maintenance public-private mix debate (GAO/T-NSIAD-96-148, 1996:3). All of the depot repair workload at Newark had been previously identified as core with the remaining Air Force depots core workload at fifty nine to eighty four percent (GAO/NSAID-95-60, 1994:5). During the closure and privatization process of Newark AFB and the Aerospace Guidance and Metrology Center, a lawsuit was filed to stop the privatization. The American Federation of Government Employees alleged the privatization violated the Federal law requiring core workloads to be preformed at government facilities (Fisher, 1996:2).

## **Impetus to Close Newark**

The first mass effort to close and consolidate military bases came in 1988 when the first round of base closures occurred, commonly referred to as BRAC 88. During this closure round the Army and Navy slated to close several of their depots. However, the Air Force did not present any Air Force depots to be closed. After glowing reports of

how successful BRAC 88 was it was determined that three more rounds of base closures would occur in 1991, 1993 and 1995.

In building the 1992 Program Objective Memorandum (POM) the Air Staff built in provisions for base closures and Newark AFB was the target. Initial targets indicated it would cost roughly \$60 million to close Newark using the Cost of Base Realignment Action (COBRA) model. However, further analysis determined the COBRA model was for estimating closure costs at a typical fighter, bomber, or other type of flying operation base and not of a base supporting a depot facility. The model didn't take into account the mission infrastructure with a depot repair base like Newark's. Most flying bases were designed to be easily mobile and not fixed in place like depots. Because a typical flying base is designed to be moved or deployed, the transportation and transition costs are significantly less than at a depot. Because the Air Staff used the COBRA model to estimate the costs of closing Newark, the estimates were largely understated. After modifications to the COBRA model it was estimated to cost \$256 million to close Newark and move the depot workload to another location (Carlin, 1997:2-5). This increase in closure costs kept Newark off the 1991 BRAC list. Twelve defense depots were closed or realigned under the BRAC process of 1988, 1991 and 1993 and only one, Newark, by the Air Force was closed (Defense Depot Maintenance Council Business Plan, 1997: 15).

The 1993 report to the President from the Defense Base Closure and Realignment Commission justified that closure of Newark AFB would reduce the Air Force excess depot capacity by 1.7 million Direct Production Actual Hours (DPAH). The report also identified the Air Force had a total excess depot capacity of 8.7 million DPAH. The

reduction of excess depot capacity was also consistent with Secretary of Defense guidance concerning DOD depots (Defense Base Closure and Realignment Commission, 1993:81).

#### **AFIT Theses on Newark/AGMC**

Several theses have already been accomplished on the privatization of the Aerospace Guidance and Metrology Center at Newark AFB. Captain Paul Pidgeon's thesis examined the effect of the privatization on the local community. This thesis delicately presented a chronological history of all the issues involved in the privatization process. Captain James Valley's thesis examined the contract types and contractor incentive issues involved in the privatization. His thesis concentrated on what incentives predicted what types of contracts are awarded to contractors. Finally, Captain Mark Luttschwager's thesis examined the organizational structure when the government operation changed to a civilian contractor.

### **III. Methodology**

#### **Introduction**

This chapter describes the research objectives along with the intent and goals of each investigative question. The case study method of researching is examined followed by discussing data collection, data analysis, and data validity.

#### **Research Objectives**

The intention of this research is to determine if the privatization of the Aerospace Guidance and Metrology Center at Newark AFB has met the goals set forth in the justification to privatize the depot repair operations.

The costs associated with the privatization are also very important to this investigation. The whole basis of the privatization-in-place concept was that it would be cheaper than other alternatives. When taxpayers' dollars are spent to make a process, in this case depot repair, more economical, it is important to examine if cost savings have materialized.

Investigating the changes and impact in depot policy and procedures resulting from the increased emphasis on privatization are very important in future depot privatization recommendations and public versus private depot competitions.

Finally, the performance metrics and the contract award fee trends are important to analyze to determine if the private contractor operations are more efficient than when the depot was under government control.

## **Method**

According to Robert K. Yin, case studies are the preferred strategy when “how” or “why” questions are being posed, when the investigator has little control over events, and when the focus is on a contemporary phenomenon with some real-life context (Yin, 1994:1). The case study approach was used because the researcher wanted to know “how” privatizing the depot repair at Newark would reduce the excess depot capacity in the Air Force. Additionally, Dane defines archival research as any research in which public record is the unit of analysis (Dane, 1990:169). The author used a combination of these two methods in researching the privatization of the Aerospace Guidance and Metrology Center.

## **Research Approach**

To examine the full extent of this research, data were gathered and analyzed to address each of the investigative questions. Each investigative question is restated with the question intent identified, followed by the documentation and organization contacted.

## **Investigative Question One**

How does the privatization of the Aerospace Guidance and Metrology Center at Newark AFB reduce the excess depot capacity within the Air Force? The intent of this question is to discern if privatizing the depot workload operations actually reduced the excess depot capacity at Newark and the Air Force. The goal was to determine if excess

depot capacity was reduced, increased, or remained the same as a result of the privatization.

The first step was to review the justifications and recommendations made by the Air Force and the Defense Base Realignment and Closure Commission concerning the Aerospace Guidance and Metrology Center and Newark AFB. This information was obtained through the 1993 Report to the President from the Defense Base Closure and Realignment Commission.

The second step was to obtain workload and capacity data for the depot repair operations at the Aerospace Guidance and Metrology Center. The time period for the repair data should encompass several years before and after the privatization. The Joint Depot Maintenance Activities Group and HQ Air Force Materials Command, Depot Maintenance Division provided workload and capacity data.

## **Investigative Question Two**

Is the contractor-operated Boeing Guidance Repair Center more costly to operate than when the government operated the repair depot? If there was a cost increase, what was it and what has been done to minimize or eliminate the excess costs?

The intent of this question was to determine if operating costs are greater or less after the depot privatization. The goal was to ascertain if the private contractor was operating the depot at a less cost to the taxpayers compared to when the operations were under government control.

The first step was to identify the costs associated with operating the repair depot while under government control. HQ AFMC Financial Management Division

accomplished this as part of the privatization process. This cost data was paramount to the privatization process for it was used by the government to compare contractor bid proposals.

The second step was to identify the costs associated with operating the repair depot while under private contractor control. This was accomplished by data obtained from HQ AFMC/FM, Ogden ALC/FM, and Oklahoma ALC/FM.

### **Investigative Question Three**

How did the performance metrics trends change after the private contractor took control over the depot repair operations?

The intent of this question is to determine if the private contractor provided the same, if not better, level of quality and delivery timeliness as when the depot was under government control. The goal is to determine if operations under contractor control are more or less effective than the operations under government control.

### **Investigative Question Four**

How did depot maintenance policy or procedures change since the privatization of the Aerospace Guidance and Metrology Center?

The intent of this question is to identify what depot maintenance policy or procedural changes have occurred as a result of the privatization process. The goal is to determine if any legal statutes governing depot operations changed or if new policies were created to govern contractor operated depots.



Initially, a review of depot policies and procedures governing depot operations before the privatization was conducted. This data was obtained from researching the Defense Depot Maintenance Council Business Plan in the years previous to the Newark depot privatization. Secondly, a review of the Defense Depot Maintenance Council Business Plan for the years following the privatization along with an interview with Mr. Tom Gordon, Joint Depot Maintenance Activities Group was conducted.

### **Data Collection**

Yin identifies six sources of evidence that are used in case studies: documents, archival records, interviews, direct observation, participant-observation, and physical artifacts (Yin, 1994:78). In this case study, official documentations, archival records, and interviews served as the sources of evidence.

In addition to the attention given to these individual sources, some over-riding principles are important to any data collection effort when conducting case studies. These include the use of: (a) multiple sources of evidence, that is, evidence from two or more sources, but converging on the same set of facts or findings; (b) a case study database, that is, a formal assembly of evidence distinct from the final case study report; and (c) a chain of evidence, that is, explicit links between the question asked, the data collected, and the conclusion drawn. The incorporation of these principles into a case study investigation will increase its quality substantially (Yin, 1994:78).

In addressing Yin's first principle of multiple sources of evidence, the author was able to extract data from the AGMC closeout history, GAO reports, and a report to the President from the Defense Realignment and Closure Commission that converged on the

same justifications used in the recommendation to close Newark AFB. Triangulation is the rationale for using multiple sources of evidence (Yin, 1994:91) that provides for converging lines of inquiry which produces more convincing and accurate findings (Yin, 1994:92).

Yin's second principle of a formal database of evidence distinct from the final case study report is outside the scope of this research. However, the AGMC closeout history that was conducted by the HQ AFMC Historian Office fits this principle. The AGMC closeout history contains an enormous wealth of information from hundreds of sources that includes six volumes of documentation.

Yin's third principle of a chain of evidence that links the questions asked, data collected, and conclusions drawn are laid out in the investigative questions asked in chapter one, findings in chapter four, and conclusions and recommendations in chapter five.

The author conducted interviews in person and obtained information via electronic mail with Oklahoma City ALC, Ogden ALC, and HQ AFMC personnel. Mr. Bill Pitts at Ogden was instrumental in obtaining information regarding the performance metrics and award fee reports. Mr. Pitts also contributed considerable guidance in analyzing this data.

Mr. Scott Debanto, a cost analyst, from HQ AFMC provided the finalized AFMC FY 97 cost comparability study of organic versus contractor operation of AGMC. This cost study provided an enormous amount of information pertaining to the costs associated with the privatization process.

The author researched data contained in the AGMC closeout history provided by the HQ AFMC Historian Office as background data to trace the privatization process from start to finish. The data provided insight to critical areas concerning the initial justification to close Newark AFB and to privatize the depot workload.

### **Data Analysis**

Data analysis is one of the least developed and most difficult aspects of conducting a case study (Yin, 1994:102). Much analysis depends on the researcher's own style of rigorous thinking along with the sufficient presentation of evidence and consideration of alternative interpretations (Yin, 1994:103). In conducting this case study, the author examined the first two investigative questions based on a form of initial official public document. The data were analyzed pertaining to how the actual outcome differed from what was initially planned.

One of the general analytical strategies proposed by Yin is to develop a descriptive framework for organizing the case study (Yin, 1994:104). This case study essentially employs the descriptive analytical approach in answering the investigative questions. For example, the investigative question concerning the cost analysis describes what factors have contributed to the increased costs associated with contractor depot repairs.

In researching, analyzing, and reporting topics in an academic environment a common theme is how can your research be generalized to other areas? In general, case study designs should be considered when a researcher is interested only in the specific individual serving as the participant. In this case, it is the privatization of depot repair

workloads at Newark AFB. Similarly, conclusions drawn from a case study should be limited to that participant. Although it is possible to generalize from a case study, it is often unwise to do so. The major assumption underlying the generalization is that the research participant represents the individual to whom the generalization is applied, and a single participant rarely represents any larger group (Dane, 1990:114). In this case study concerning the privatization of the Aerospace Guidance and Metrology Center at Newark AFB, the author makes no generalizations that should be applied to the remaining Air Force depots. The complex nature of the depot product mixes and unique workloads make it very difficult and unpractical to suggest any generalizations between the privatization of Newark and other ongoing Air Force depot privatization issues.

### **Data Validity**

In this research the author employed the triangulation principal of multiple sources to each area of investigation. An important advantage presented by using multiple sources of evidence is the development of converging lines of inquiry. Thus any finding or conclusion in a case study is likely to be much more convincing and accurate if it is based on several different sources of information (Yin, 1994:92). For example, the depot capacity and workload data obtained from HQ AFMC/LGP matched the data obtained from the Joint Depot Maintenance Activities Group data as well as published data contained in the Defense Depot Maintenance Council Business Plan for the fiscal years studied. Additionally, interviews and correspondence from multiple people involved in the privatization process came to the same conclusions on several issues.

The potential problems of construct validity can be addressed through the use of triangulation. The multiple sources of evidence essentially provide multiple measures of the same phenomenon, thus increasing construct validity (Yin, 1994:92).

## **IV. Results and Analysis**

### **Introduction**

The objective of this research is to examine if the privatization of the Aerospace Guidance and Metrology Center at Newark AFB has met expectations as set forth in the initial justification to close the repair depot, examine whether the depot operations are costlier under a private contractor, examine performance metrics of the depot operations under the private contractor, and examine how the depot policies have changed.

To accomplish this, the researcher has evaluated written documents contained in the Aerospace Guidance and Metrology Center closeout history, General Accounting Office reports, Defense Base Closure and Realignment Commission report to the President, correspondence with defense depot management personnel and reviewed documented interviews with key personnel involved in the privatization process. This chapter presents the data collected from personal interviews, correspondence with HQ AFMC/FM, Ogden ALC and JDMAG personnel, and the Aerospace Guidance and Metrology Center closeout history.

### **Excess Depot Capacity**

How did the privatization of the Aerospace Guidance and Metrology Center at Newark AFB reduce the excess depot capacity within the Air Force?

Analysis of actual capacity and excess capacity of the Aerospace Guidance and Metrology Center depot was investigated. Table 2 (JDMAG and AFMC/LGP, 1999)

illustrates the Newark depot actual workload and capacity for FY 86 through FY 96 at the Aerospace Guidance and Metrology Center.

**Table 2. AGMC Workload and Capacity Hours**

	FY 96	FY 95	FY 94	FY 93	FY 92	FY 91
Workload	612,000	679,000	899,000	1,128,000	1,232,000	1,666,000
Capacity	890,000	1,062,000	1,150,000	1,468,000	1,643,000	1,597,000
Capacity Util. %	0.69	0.64	0.78	0.77	0.75	1.04
	FY 90	FY 89	FY 88	FY 87	FY 86	
Workload	2,141,000	1,832,000	1,884,000	1,854,000	1,847,000	
Capacity	1,801,000	1,997,000	1,348,000	1,347,000	1,336,000	
Capacity Util. %	1.19	0.92	1.40	1.38	1.38	

The data clearly indicate a large flaw in the assumption that closing Newark's depot would reduce the overall depot excess capacity. These figures illustrate that Newark's excess capacity was only a small percentage of the overall depot capacity. For example, in FY 92 the excess capacity was 411,000 hours which is far from the 1.7 million hours that was identified as excess.

Wally Horton, a key player in the privatization of Newark, identified this to the Jim Courter, Chairman of the Base Closure Executive Group (Horton, 1993). Jim Courter wrote a letter to James Boatright, Deputy Assistant Secretary of the Air Force for Installations, asking the question how the closure of Newark's depot would solve the depot excess capacity problem (Courter, 1993). James Boatright, with the assurance from the HQ USAF that closing the depot at Newark would rid the Air Force of 1.7 million DPAH (Boatright, 1993).

In the 1994 GAO report that examined cost growth and other factors affecting the privatization of Newark, the question was broached concerning the excess capacity of the depot. The GAO reported it was difficult to understand how the Air Force was going to eliminate the 1.7 million DPAH of excess capacity and goes as far to say the privatization of Newark would not reduce excess depot capacity (GAO/NSAID-95-60, 1995:9). The Air Force responded to the GAO report and clarified that the privatization of Newark's depot did not affect excess depot capacity, however, the Air Force could reduce its organic depot capacity by 1.7 million DPAH (HQ USAF/LG, 1995). This response by HQ USAF/LG was in direct contradiction for which the entire justification of closing the Newark depot was based.

An aggregate comparison of depot workload and capacity between the Aerospace Guidance and Metrology Center and the San Antonio Air Logistics Center is illustrated in table 3 (JDMAG and AFMC/LGP, 1999).

**Table 3. San Antonio ALC and AGMC Workload and Capacity Hours**

San Antonio Air Logistics Center Workload/Capacity Data							
Hours in (000)	FY 91	FY 90	FY 89	FY 88	FY 87	FY 86	Total
Workload	8585	9640	11016	8371	8648	10910	57170
Capacity	8935	8859	8859	12908	12908	12993	65462
Capacity Util. %	0.96	1.09	1.24	0.65	0.67	0.84	0.87
Aerospace Guidance and Metrology Center Workload/Capacity Data							
	FY 91	FY 90	FY 89	FY 88	FY 87	FY 86	Total
Workload	1666	2141	1832	1884	1854	1847	11224
Capacity	1597	1801	1997	1348	1347	1336	9426
Capacity Util. %	1.04	1.19	0.92	1.40	1.38	1.38	1.19



The data reveal over a six-year time period that the San Antonio depot had far more excess capacity than the Newark depot. Based on the results of this data, it can be suggested that the closure of Newark AFB and the privatization of the Aerospace Guidance and Metrology Center were not focused on reducing excess depot capacity.

### **Costs of the Privatization-In-Place**

Is the contractor operated Boeing Guidance Repair Center more costly than when the government operated the repair depot? If there was a cost increase, what was it and what has been done to minimize or eliminate the excess costs?

Air Force Materiel Command completed in an interim cost analysis comparing the Aerospace Guidance and Metrology Center and the Boeing Guidance Repair Center in July 1997. The analysis was included in the 1997 GAO report *Analysis of Aircraft and Missile Guidance System Depot Repair Costs*. Table 4 (GAO/NSAID-98-35, 1997:23) illustrates the analysis of the cost comparison. Using the most likely data, it is estimated to cost an additional \$14.1 million to operate the depot maintenance repair operations under the private contractor's control.

The cost analysis referenced by GAO identified three major factors that have led to increased costs at the BGRC facility. These factors are material costs, contract administration and oversight, and contract award fee.

**Material Costs.** Increased material consumption by Boeing has contributed to an estimated \$5.5 million in increased costs. The Air Force Audit Agency (AFAA) was asked by AFMC to determine Boeing's actual material usage. At the time AFAA made

several observations. First, Boeing's inventory records were not complete or accurate to determine the total value of on hand inventory or inventory usage. Boeing appeared to

**Table 4. GAO Interim Cost Analysis Summaries**

	Optimistic	Most Likely	Pessimistic
Missiles AGMC	42,993,855	41,154,587	40,512,943
Missiles BGRC	43,527,092	45,509,268	51,321,727
Difference	533,237	4,354,681	10,808,784
Aircraft AGMC	37,147,039	34,386,422	33,271,371
Aircraft BGRC	39,920,618	42,380,471	50,710,634
Difference	2,773,579	7,994,049	17,439,263
Metrology AGMC	9,529,315	8,671,675	8,196,359
Metrology BGRC	9,654,497	10,453,622	11,982,424
Difference	125,182	1,781,947	3,786,065
Total AGMC	89,670,209	84,212,684	81,980,673
Total BGRC	93,102,207	98,343,361	114,014,785
Total Difference	3,431,998	14,130,677	32,034,112

have a greater amount of government furnished material than necessary for existing needs. Also, items to be repaired have been misclassified as government furnished material. The AFAA suggested that two factors would inhibit the ability to reconcile the physical inventory with the inventory records. First, Boeing accepted the transfer of material inventory from the Air Force without the Air Force performing a physical inventory. Both the Air Force and Boeing agreed to the acceptance without inventory when the workload transferred from the government to Boeing. However, Boeing disputes the accuracy of the Air Force's inventory transfer documents. Second, Boeing

assumed control over stock already issued to the floor, used for work-in-progress, which was not on Air Force inventory records (GAO/NSAID-98-35, 1997:7).

The Air Force Audit Agency conducted a follow-on audit concerning the material issues at the Boeing Guidance Repair Center and reported the findings in an August 1998 report. This report focused on two areas, material management oversight and government material access controls. According to the report, Ogden and Oklahoma City ALCs material managers did not maintain adequate government furnished material (GFM) inventory visibility to accomplish up-front contractor requisition reviews. Specifically, the material managers did not receive inventory data for residual GFM amounting to \$114.7 million that was provided to Boeing (Air Force Audit Agency, 1998:1).

Table 5 (Air Force Audit Agency, 1998:2) illustrates examples of the inventory differences between what the material managers at the ALCs had on their records and what Boeing inventory stock records where. This table clearly exemplifies the huge discrepancies of the inventory levels there was concerning materials. This table also is only an example of ten items in a system that contains 11, 452 national stock numbers.

In an interview with Mr. Jerry Pratt, Program Integrator at Defense Contracting Management Command Dayton-Newark, it was identified that most of the initial material problems have been corrected. After the transition to Boeing, personnel responsible for ordering material would requisition from inventory "one unit" of an item to find out later that "one unit" consisted of ten or maybe one-hundred units. This type of ordering error can rapidly drive up the materials costs when high dollar items are involved.

Additionally, because a complete inventory of materials was not accomplished

**Table 5. ALC/BGRC Inventory Differences**

National Stock Number	ALCs BGRC Inventory Balance	BGRC Inventory Balance	Unit Cost	Total Cost
5962 01 208 8560	1	3,744	\$ 116.06	\$ 434,529
5305 01 254 6727	7	1,534	126.25	\$ 193,668
5962 01 209 9072	1	1,196	238.57	\$ 285,330
5305 01 254 0415	56	753	9.56	\$ 7,199
5962 01 192 5453	2	14,200	208.90	\$ 2,966,380
5930 00 870 2640	77	250	332.88	\$ 83,220
6105 00 210 8441	40	111	134.30	\$ 14,907
5945 01 333 6361	0	49	171.83	\$ 8,420
6615 01 006 5236	0	523	593.64	\$ 310,474
6615 00 715 3265	7	49	2,341.91	\$ 114,754
				<b>\$ 4,418,879</b>

during the transition phase, materials were ordered even though they were on-hand but storage location was unknown – which were later found (Pratt, 1999). Subsequently, Boeing notified the AFAA that 2,978 requisitions valued at \$17.4 million were recognized as errors and canceled (Air Force Audit Agency, 1998:6).

Procedures requiring Boeing to identify residual materials was not required by the initial contract. The contract has since been amended to include the collection and reporting of inventory for all government furnished material left in place after the privatization of the Aerospace Guidance and Metrology Center.

Computer interface limitations kept ALC managers from retaining visibility over what total item balances were and where at BGRC these items were located. This enabled Boeing personnel to requisition material in excess quantities to actual repair requirements. In a sample of seventeen national stock numbers (NSN), in which the ALC

materials managers allowed Boeing to requisition valued at \$70,358, it was identified excess quantities of these NSNs were already on-hand (Air Force Audit Agency, 1998:2). This was caused by the validation of material request at the Federal Stock Class (FSC) level by AFMC financial management personnel. The practice of validating at the FSC level was cited as the labor-intensive hours that would have been spent on manually loading the massive quantities of national stock numbers. New procedures and an automated system have since been implemented for editing Boeing's government furnished materials requests (Air Force Audit Agency, 1998:5).

**Contract Oversight and Administration Costs.** Contract oversight and administration costs have been identified as an area of increased cost, \$3.4 million, by the previously mentioned GAO report (GAO/NSAID-98-35, 1997:9). These costs are included due to a "leveling" effect needed to compare government organic public facilities against private contractors. The Defense Depot Maintenance Council's Cost Comparability Handbook (1998:23) identifies that contract oversight and administration costs must be included when competing depot repair workloads against a public or private contract.

The inclusion of the contract oversight and administrations costs are added because the contract to Boeing required oversight from three entities: the Defense Contract Management Command (DCMC), the Ogden Air Logistic Center's program office, and the Defense Contract Audit Agency (DCAA) (GAO/NSAID-98-35, 1997:9). The final FY 97 cost comparability studies of AGMC versus BGRC completed by Ogden, Oklahoma City, and Warner Robins ALCs identify the contract oversight and administration costs have increased to \$4.3 million. Appendix A (Ogden Air Logistics

Center, 1998) illustrates the total cost comparability of AGMC/BGRC for Ogden missile repair costs. Appendix B (Oklahoma City Air Logistics Center, 1998) illustrates the total cost comparability of AGMC/BGRC for Oklahoma City aircraft repair costs. Appendix C (Warner Robins Air Logistics Center, 1998) illustrates the cost comparability of AGMC/Wyle Laboratories privatization costs.

There is nothing that can be rectified to reduce the additional cost of contract oversight and administration. This is considered a cost of privatization that must be included to make a comparison between organic and private depot repairs.

**Contract Award Fee Costs.** Contract award fee costs have been identified as an area of increased cost of \$5.2 million. This cost was first included as a cost element by a joint memorandum from the Principal Deputy Assistant Secretaries of the Air Force for Acquisitions and Financial Management in December 1996 (GAO/NSAID-98-35, 1997:9). The January 1998 revised cost comparability specifically identifies that contract award fee must be included in cost comparisons (Defense Depot Maintenance Council Cost Comparability Handbook, 1998:24). Again, as with contract oversight and administration costs, there is nothing that can be rectified to reduce contract award fee costs associated with the privatization. These costs must be included to make a reasonable cost comparison between the organic and private workload costs. Table 6 (OO-ALC, OC-ALC, WR-ALC Cost Studies, 1998) illustrates an overall cost comparability of the privatization of the AGMC repair depot workload at Newark AFB versus the private contract performed there by Boeing.

These data indicate that it will cost American taxpayers \$16.7 million, or 21 percent more, to have a private contractor operate the repair depot than when the

government organically operated the repair depot. Add in the estimated sum of \$53 million in Newark AFB closing costs and costs associated in privatizing AGMC (Fisher, 1996:202), this privatization effort has cost taxpayers almost \$70 million more than if the depot repair facility would have remained organic to the Air Force.

**Table 6. AGMC/BGRC FY97 Cost Comparability Summary**

	Optimistic	Most Likely	Pessimistic
Missiles AGMC	31,980,617	33,878,964	37,225,205
Missiles BGRC	38,775,861	41,046,491	45,103,128
Difference	6,795,244	7,167,527	7,877,923
Percent Delta	21.25	21.16	21.16
Aircraft AGMC	40,322,625	37,502,063	36,392,388
Aircraft BGRC	44,023,213	45,205,237	48,073,915
Difference	3,700,588	7,703,174	11,681,527
Percent Delta	9.18	20.54	32.10
Metrology AGMC	9,705,508	8,837,239	8,344,290
Metrology BGRC	10,722,795	10,722,795	10,722,795
Difference	1,017,287	1,885,556	2,378,505
Percent Delta	10.48	21.34	28.50
Total AGMC	82,008,750	80,218,266	81,961,883
Total BGRC	93,521,869	96,974,523	103,899,838
Total Difference	11,513,119	16,756,257	21,937,955
Percent Delta	14.04	20.89	26.77

A significant aspect of the entire privatization process that has been overlooked is the initial cost estimates that determined privatization could save \$5 million a year. The pre-contract cost award analysis conducted by AFMC in 1995 that, in essence, continued the privatization of the AGMC is nowhere to be found (GAO/NSAID-98-35, 1997:5).

The lost AFMC cost analysis report leads to questioning if all the needed cost estimates and factors were included in this analysis.

The intent of the BRAC process is to close or realign military activities that will result in savings to the government and, in-turn, the taxpayer. However, this may not have been the case with Newark AFB. In correspondence with Lt Col Paul Stipe, a key player in the AGMC privatization acquisition process, it was conveyed that saving money was not a top priority in the privatization process. The author asked Lt Col Stipe if the privatization in place was in the name of saving money. The response was, "Yes, BRAC was intended to save money. However, when I started to develop the strategy for privatizing Newark AFB, and I took our strategy to the AFMC/CC (Gen Yates), the very clear statement we were told was that, "This is not about saving money. It is about closing a base" (Stipe, 1999).

### **Aerospace Guidance and Metrology Center Performance Metrics**

What were the performance metrics trends before the privatization of the Aerospace Guidance and Metrology Center? Performance metrics of the AGMC are evaluated under the performance criteria outlined in the Handbook for Depot Maintenance Operations Indicators. Tables 7 - 12 illustrate the performance metrics of AGMC over a four-year time period of FY 92-95.

**Throughput and Operating Expense.** The data presented in Table 7 (Depot Maintenance Operations Indicators, 1999) represent two performance measures, throughput and operating expense. The measurement of throughput is vital because it to



determines if an organization is growing or shrinking. In addition, throughput is essential to the survival of an organization, and the goal of this objective is for increased throughput (Handbook for Depot Maintenance Operations Indicators, 1997:3-2). The data in Table 7 (Depot Maintenance Operations Indicators, 1999) suggest the throughput

**Table 7. AGMC Throughput and Operating Expense**

	REVENUE - DIRECT MATERIAL = THROUGHPUT			
	TOTAL COST- DIRECT MATERIAL= OPERATING EXPENSE			
FY	<u>92</u>	<u>93</u>	<u>94</u>	<u>95</u>
Revenue (\$)	92,100,000	82,300,000	72,866,000	78,091,000
Total Cost (\$)	85,100,000	77,704,000	78,445,000	74,095,000
Direct Materials (\$)	15,919,000	16,350,000	30,115,000	17,710,000
Throughput (\$)	76,181,000	65,950,000	42,751,000	60,381,000
Operating Expense (\$)	69,181,000	61,354,000	48,330,000	56,385,000

at AGMC has been declining since fiscal year 1992. According to the Handbook for Depot Maintenance Operations Indicators, throughput is the rate at which an organization generates money through sales. The trend of decreasing throughput at AGMC indicates poor throughput performance.

Operating expense is the second performance indicator that is defined by Cox (1998:56) as the amount of money spent by the organization to convert inventory into throughput. The objective of this performance indicator is to review the sources of operating expenses to ensure that it is used for the conversion of inventory into throughput. In addition, the goal of the indicator when throughput is decreasing is to decrease at a faster rate (Handbook for Depot Maintenance Operations Indicators, 1997:3-3). The trend in Table 7, pertaining to operating expense, is not decreasing at a faster rate than the throughput is decreasing.

**NET Operating Results (NOR).** The Net Operating Results of AGMC are comprised of two indicators illustrated in Table 8 (Depot Maintenance Operations Indicators, 1999). The first indicator is the budgeted costs and revenues followed by the second indicator of actual costs and revenues. The budgeted NOR index represents how well the depot management developed the forecasted financial plan. The forecast is based on internal factors of cost and the market forces of competition and sales. The ability of

**Table 8. AGMC Net Operating Results (NOR)**

BUDGETED REVENUE/BUDGETED COST = BUDGETED NOR INDEX				
ACTUAL REVENUE/ACTUAL COST = ACTUAL NOR INDEX				
FY	<u>92</u>	<u>93</u>	<u>94</u>	<u>95</u>
Budgeted Revenue (\$)	101,500,000	95,200,000	81,754,000	84,525,000
Budgeted Cost (\$)	87,300,000	93,700,000	89,283,000	86,027,000
<b>Budgeted NOR INDEX</b>	1.16	1.02	0.92	0.98
Actual Revenue (\$)	92,100,000	82,300,000	72,866,000	78,091,000
Actual Cost (\$)	85,100,000	77,704,000	78,445,000	74,095,000
<b>Actual NOR INDEX</b>	1.08	1.06	0.93	1.05
<b>NOR INDEX</b>	0.93	1.04	1.01	1.07

depot management to adhere to the forecasted financial plan is the actual NOR index. An overall NOR index of greater than 1.00 indicates the actual revenue and cost ratio were lower than what was budgeted. The goal is to obtain an actual NOR index equal or greater to the budgeted NOR index (Handbook for Depot Maintenance operations Indicators, 1997:3-11). The data in Table 8 (Depot Maintenance Operations Indicators, 1999) suggests AGMC accomplished the goal of a NOR ratio of 1.00 or greater.

**Total Hourly Cost.** The total hourly cost indicator exemplifies the hourly rate that gets passed on to customers. The desired behavior of this indicator is to reduce the

cost to the customer, while improving the performance of the products it produces (Handbook for Depot Maintenance Operation Indicators, 1997:3-13). The data presented in Table 9 (Depot Maintenance Operations Indicators, 1999) indicate an increasing total hourly cost of the AGMC from 1992 through 1995. The handbook for Depot Maintenance Operation Indicators identifies that, if a depot decreases its workload

**Table 9. Total Hourly Cost**

(TOTAL BUDGETED COST/BUDGETED TOTAL DLH) = BUDGETED TOTAL HOURLY COST (TOTAL ACTUAL COST/ACTUAL TOTAL DLH) = ACTUAL TOTAL HOURLY COST				
FY	92	93	94	95
Total Budgeted Cost (\$)	87,300,000	93,700,000	89,283,000	86,027,000
Budgeted Total DLH	1,379,825	1,165,012	1,019,722	832,811
<b>Budget Total Hourly Cost</b>	<b>\$63.27</b>	<b>\$80.43</b>	<b>\$87.56</b>	<b>\$103.30</b>
Total Actual Cost (\$)	85,100,000	77,704,000	78,445,000	74,095,000
Actual Total DLH	1,285,103	954,964	811,675	662,147
<b>Actual Total Hourly Cost</b>	<b>\$66.22</b>	<b>\$76.76</b>	<b>\$96.65</b>	<b>\$111.90</b>
<b>Actual/Bud Hourly Cost</b>	<b>1.05</b>	<b>0.95</b>	<b>1.10</b>	<b>1.08</b>

without decreasing overhead, the hourly cost will increase as a function of not being able to spreading indirect and overhead costs. As with the case of AGMC, workload was approximately cut in half between FY 1992 and 1995 and the total hourly cost increased.

**Capital Investment Effectiveness.** The Capital Investment Effectiveness (CIE) indicator of AGMC is illustrated in Table 10 (Depot Maintenance Operations Indicators, 1999). This indicator measures the effectiveness of total throughput versus the long-term inventory at the depot. The long-term inventory is the total depreciated value of all capital assets. The desired goal of this indicator is to have a continually increasing CIE index, which relates to a proper allocation of depot resources (Handbook for Depot Maintenance Operation Indicators, 1997:3-5).

The data in Table 10 (Depot Maintenance Operations Indicators, 1999) indicate a continually decreasing CIE trend at AGMC. As identified by the total hourly cost and the

**Table 10. AGMC Capital Investment Effectiveness**

THROUGHPUT/LONGTERM INVENTORY = CAPITAL INVESTMENT EFFECTIVENESS				
FY	<u>92</u>	<u>93</u>	<u>94</u>	<u>95</u>
Throughput (\$)	76,181,000	65,950,000	42,751,000	60,381,000
Long-term Inventory (\$)	654,595,405	604,707,339	583,141,022	610,483,649
INDEX	0.12	0.11	0.07	0.10

schedule indicator data in Table 11, total hours and components repaired were reduced by 50 percent between fiscal years 1992 and 1995, and that has a direct effect on throughput and the CIE performance indicator.

**Schedule Indicator.** The schedule indicator measures what quantity of repair work was accomplished on time. This indicator does not include unplanned workload or surge requirements but does have provisions to change a customer's workload priorities to meet operational requirements (Handbook for Depot Maintenance Operation Indicators, 1997:3-6). Through examining the schedule indicator data in Table 11 (Depot Maintenance Operations Indicators), a negative trend for accomplishing repair work on schedule is identified.

**Summary of AGMC Performance Metrics.** A summary of the performance metrics at AGMC of fiscal years 1992 through 1995 is illustrated in table 12. It is evident the performance metrics were declining prior to the privatization of AGMC.

**Table 11. AGMC Schedule Indicator**

UNITS COMPLETED ON TIME/UNITS SCHEDULED				
FY	<u>92</u>	<u>93</u>	<u>94</u>	<u>95</u>
Components Scheduled	17,271	12,170	11,508	8,790
Components Completed	15,972	11,144	10,501	8,002
INDEX	0.925	0.916	0.912	0.910

**Table 12. Summary of AGMC Performance Metrics**

Indicator	Trend FY 92-95	Effect
Throughput	Decreasing	Money generation slowing
Operating Expense	Slowly decreasing	Expenses not in-line with throughput
Net Operating Results	Above break even	Non-optimal planning
Total Hourly Cost	Increasing	Higher per unit cost
Capital investment Effectiveness	Decreasing	Low return on capital assets
Schedule Indicator	Decreasing	Deliveries not on time

#### **Boeing Guidance Repair Center Performance Metric**

Performance metrics of the Boeing Guidance and Repair Center are evaluated under the Aircraft and Missile Award Fee Plans. The privatization of the AGMC depot operations to the private contractor, Boeing, has changed considerable the performance metrics of the repair operations. The performance metrics that were reported according to the Handbook for Depot Maintenance Operations Indicators do not apply to privately contracted depot repairs. Instead, an award fee plan for the aircraft and missile workloads were included as part of the contract to Boeing.

**Missile Award Fee Plan.** The award fee plan for repair of the missile workload includes four areas of evaluation: quality and repair performance, cost performance, risk

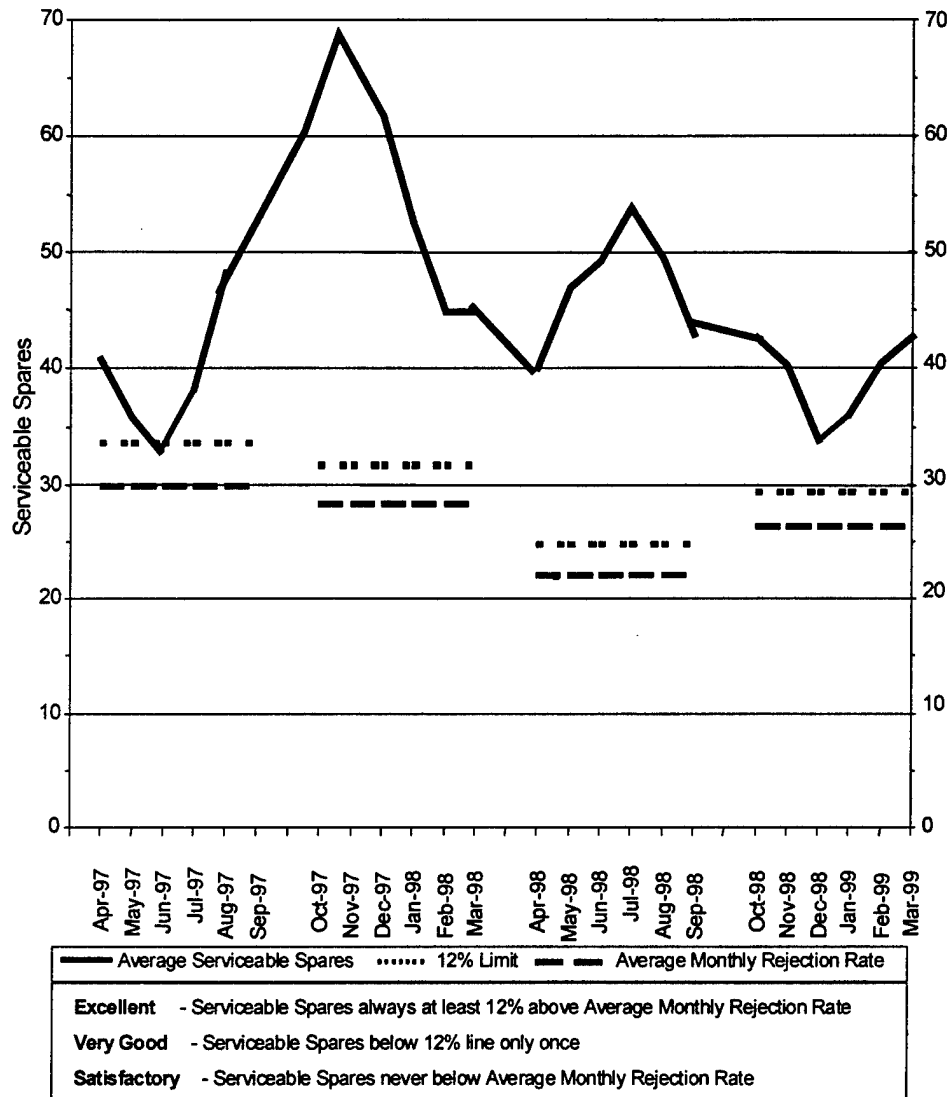
identification and mitigation, and ICBM team relationships (Award Fee Plan for the ICBM Guidance Repair Program, 1999:8).

**Quality and Repair Performance.** The quality and repair performance metrics area consists of four metrics: serviceable spares available, total number of zero and short time rejections, total number of repeat rejections, and probability of survival. Separate metrics are maintained for the Minuteman and Peacekeeper systems.

The serviceable spares metric is the monthly average of the total number of serviceable at all missile wings. To achieve an excellent rating the indicator for the serviceable spares metric requires that enough guidance sets are available so the serviceable spares metric is always at least 12 percent above the average monthly rejection rate of the previous period (Award Fee Plan for the ICBM Guidance Repair Program, 1999:11).

Figure 1(ICBM Guidance System Repair Award Fee Briefing, 1999:10) illustrates Minuteman NS-20 serviceable spares. The data in Figure 1 identifies the serviceable spares level has been excellent since July 1997. The total number of zero and short time rejects is defined as assets rejected with zero to 720 operational hours. The total number of zero and short time rejection should be 28 or less per month to achieve an excellent rating (Award Fee Plan for the ICBM Guidance Repair Program, 1999:11).

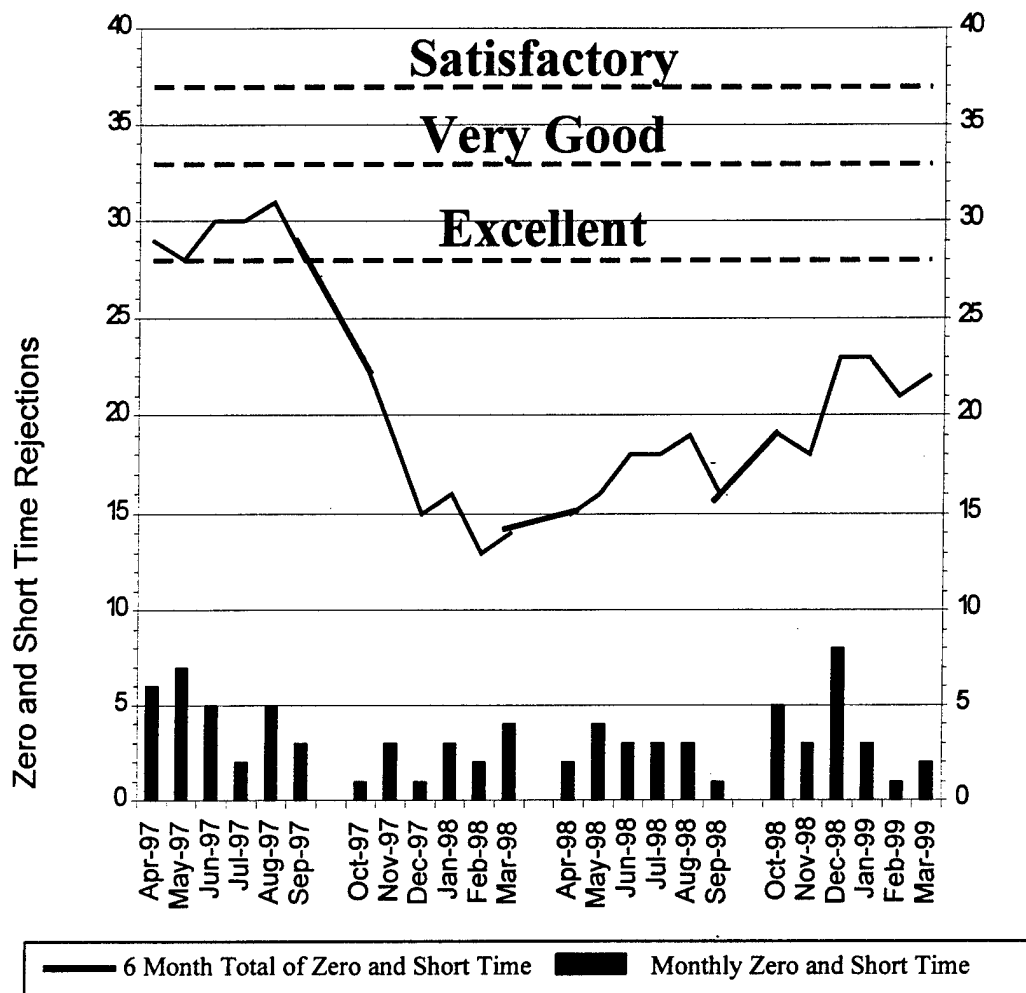
Figure 2 (ICBM Guidance System Repair Award Fee Briefing, 1999:8) illustrates the Minuteman NS-20 zero and short time rejects. The data in Figure 2 presents that since April of 1997 no single month incurred more then 10 rejects, which is significantly lower then the required maximum of 28. From September 1997 the six-month average has been



**Figure 1. Minuteman NS-20 Serviceable Spares**

well under the 28 required for an excellent rating (ICBM Guidance System Repair Award Fee Briefing, 1999).

The repeat rejection performance measure is defined as a rejection with similar rejection systems with less than 2000 hours on a specific system. To achieve an excellent rating the total number of repeat rejections must be 12 or less (Award Fee Plan for the

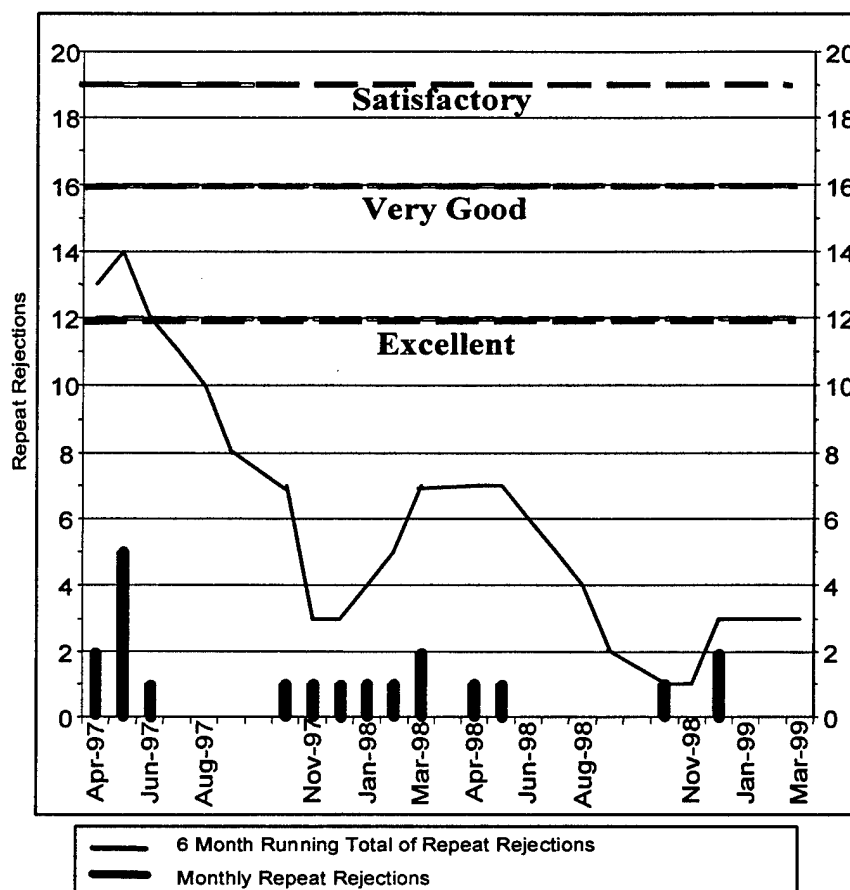


**Figure 2. Minuteman NS-20 Zero and Short Time Rejections**

ICBM Guidance Repair Program, 1999:11). Figure 3 (ICBM Guidance System Repair Award Fee Briefing, 1999:9) illustrates the Minuteman NS-20 repeat rejections. The data in Figure 3 presents the monthly repeat rejections have been significantly under the required 12 to achieve an excellent rating.

The Minuteman guidance system probability of error indicates how long a unit is expected to operate. A 12-month historical baseline is used to make a comparison of data (Award Fee Plan for the ICBM Guidance Repair Program, 1999:11).





**Figure 3. Minuteman NS-20 Repeat Rejections**

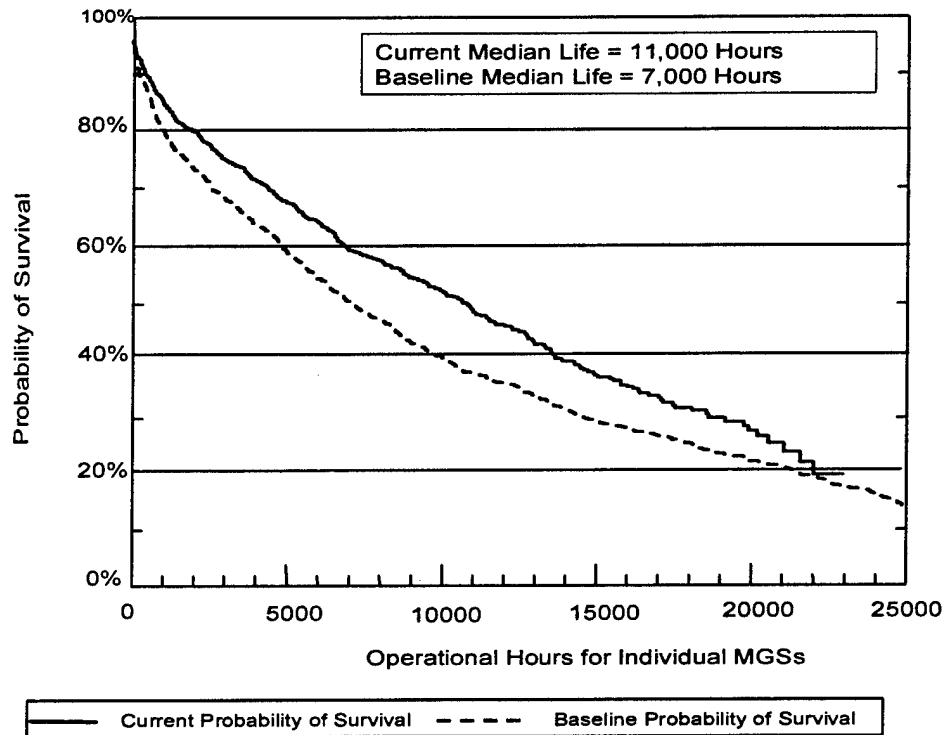
Figure 4 (ICBM Guidance System Repair Award Fee Briefing, 1999:11)

illustrates the current Minuteman missile guidance system probability of survival performance measure.

The Peacekeeper quality and repair performance metrics consists of Peacekeeper NS-30 serviceable spares and repaired rejections. To receive an excellent rating enough guidance sets spares must be available to keep the vault holding area filled (Award Fee Plan for the ICBM Guidance Repair Program, 1999:12). According to the missile award fee plan the number of spare guidance sets has been set at seven.

Figure 5 (ICBM Guidance System Repair Award Fee Briefing, 1999:12)

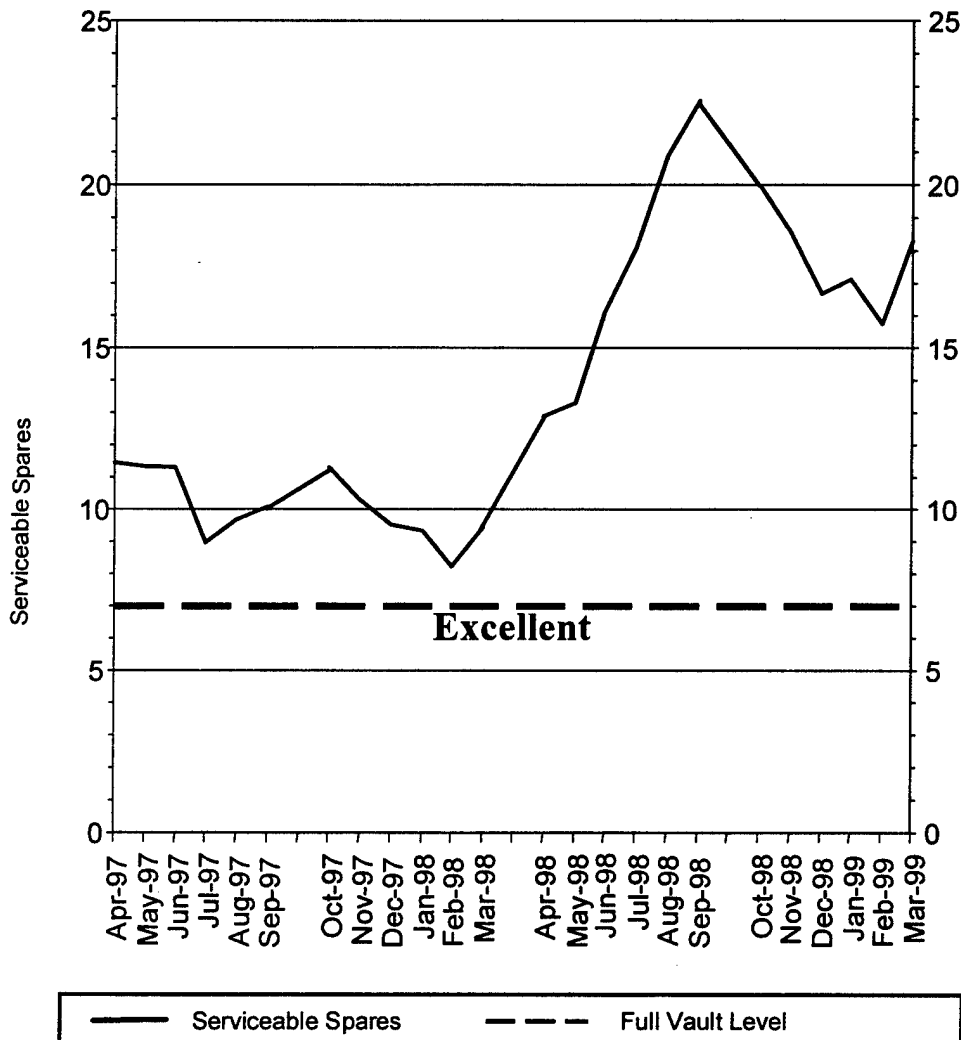
illustrates the monthly status of the Peacekeeper guidance set spares. As the data presents, there have been ample guidance sets available as spares for the last two years.



**Figure 4. Minuteman Missile Guidance System Probability of Survival**

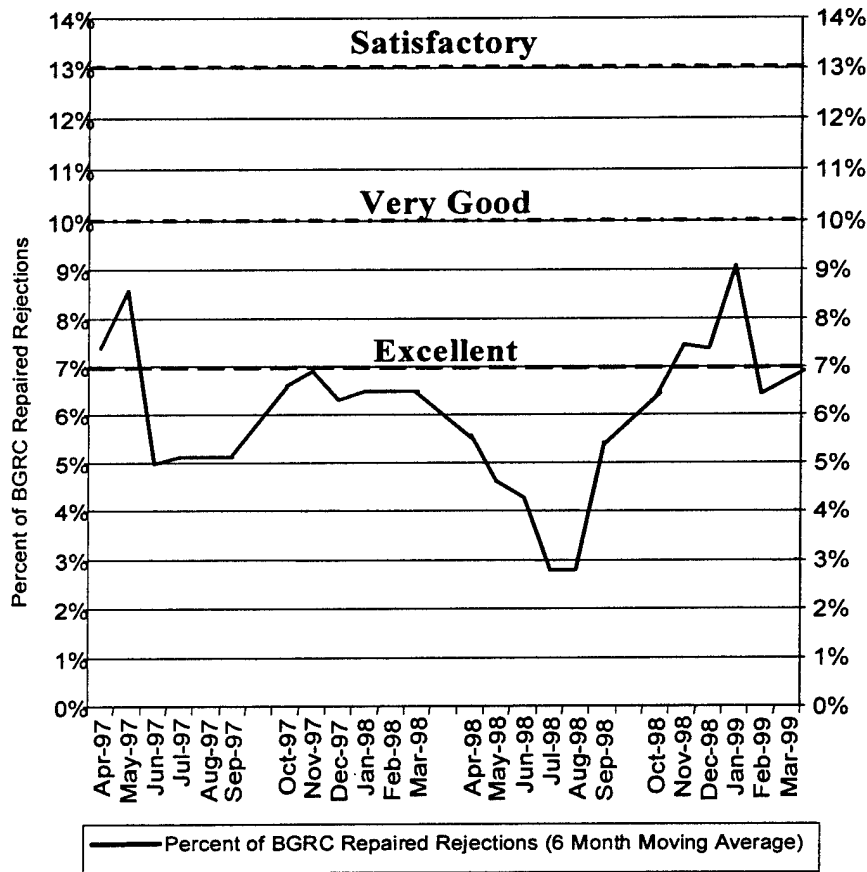
The second performance metric is the Peacekeeper NS-30 repaired rejections. To receive an excellent rating the average number of repaired rejections must be less than seven percent of the monthly repaired guidance sets (Award Fee Plan for the ICBM Guidance Repair Program, 1999:12). Figure 6 (ICBM Guidance System Repair Award Fee Briefing, 1999:13) illustrates the number of Peacekeeper NS-30 monthly repaired rejects covering a two-year period from April 1997 through March 1999.

As the data in Figure 6 presents, between November 1998 and January 1999 the repaired rejections went above the excellent rating. Consequently, over the 18 months prior to November 1998, only in April 1997 was the repaired rejection rate above seven percent. The repair rejections remained, for the most part, in the excellent rating area.



**Figure 5. Peacekeeper Serviceable Spares**

**Missile Cost Performance.** The cost performance metrics for the missile guidance repair program consists of meeting the government cost objectives for the program as outlined in the repair contract. To achieve an excellent rating in cost, the contractor must strive to improve cost performance without any sacrifice to quality. In addition, the contractor must identify potential cost performance and funding issues and



**Figure 6. Peacekeeper NS-30 Repaired Rejections**

pursue solutions to problems that may impact the overall program costs. The contractor must also submit all cost reports on time with a full analysis explaining cost variances (Award Fee Plan for the ICBM Guidance Repair Program, 1999:13). According to the ICBM Guidance System Repair Award Fee Briefing, Boeing has been under the contract

budgeted costs by 4.4 percent. Additionally, Y2K requirements were completed on schedule and within budgeted costs. Overall cost performance has been rated as excellent for the BGRC over the past award period (ICBM Guidance System Repair Award Fee Briefing, 1999:4).

**Risk Identification and Mitigation.** To achieve an excellent rating in the risk identification and mitigation area several tasks must be accomplished. First, Boeing must proactively and formally identify areas of technical or management risks and develop plans to resolve the risks. Boeing must also anticipate potential problems and take action to minimize the impact. Finally, Boeing must actively work with the Guidance Replacement Program (GRP) community to minimize the GRP risks and enhance the performance of the total GRP (Award Fee Plan for the ICBM Guidance Repair Program, 1999:14). The May 1999 ICBM Guidance System Repair Award Fee Briefing (1999:5) identified that Boeing is actively working with the GRP community and received an excellent rating.

**ICBM Team Relationship.** The Award Fee Plan for the ICBM Guidance Repair Program (1999:14) identifies Boeing must demonstrate exceptional team working relationships at the repair facility to receive an excellent rating. Additionally, team member conflicts and program conflicts must be identified and resolved without government assistance. Finally, all contractual relationships with team members (vendors or third party providers) must not interfere with program support requirements. According to the May 1999 ICBM Guidance System Repair Award Fee Briefing (1999: 6) the BGRC team performed excellent with personnel from the Defense Logistics Agency (DLA) along with the Y2K and new Minuteman guidance part vendors.

**Aircraft Award Fee Plan.** The award fee plan for the repair of the aircraft workload includes three areas of evaluation: repair performance, cost performance, and program management (Award Fee Plan for Aircraft Guidance and Navigation Repair Program, 1997:9).

**Aircraft Repair Performance.** The repair performance area on the aircraft award fee plan includes three sub-categories to include schedule performance, field performance, and procedures, skills and parts support.

The schedule performance measure requires the contractor to maintain an effective repair program. To accomplish this and receive an excellent rating, Boeing must meet 95 percent of the required delivery schedule for repaired items (Award Fee Plan for the Aircraft Guidance and Navigation Repair Program, 1997:11).

BGRC has received an excellent rating in schedule performance except for one six month period. Since the start of the contract 100 percent of the contract delivery requirements have been met with the exception of April 1997 through September 1997 where only 89 percent of deliveries were on time (Aircraft Award Brief, 1999:26). Additionally, it was identified that very little to no government intervention was required for BGRC to meet production requirements (Aircraft Award Brief, 1999:4).

The field performance measure demonstrates the reliability, maintainability, and accuracy of the repaired systems and equipment in the operational environment. To achieve an excellent rating, Boeing's aircraft repair program must be proactive and efficient. To accomplish this, the overall field performance must demonstrate improvement in quality deficiency reports (QDR), reliability, and mission capable

(MICAP) rates (Award Fee Plan for the Aircraft Guidance and Navigation Repair Program, 1997:11-12).

BGRC has received an excellent rating in field performance of repaired items since the start of the contract (Aircraft Award Brief, 1999:26). Additionally, the performance of repaired items in the field has continued to improved with zero workmanship QDRs in 3047 total repaired items (Aircraft Award Brief, 1999:6).

The procedures, skills, and parts support performance measure demonstrates the ability of Boeing to maintain a parts system that supports contract delivery requirements. To receive an excellent rating, Boeing must ensure that no production is impacted due to non-availability of contractor furnished materials (CFM). Additionally, Boeing must track all CFM and be proactive in achieving best values for the government considering order and inventory costs. Finally, Boeing must maintain a formally documented training program and insure the experience level of hired employees is adequate to perform assigned tasks (Award Fee Plan for the Aircraft Guidance and Navigation Repair Program, 1997:11-12).

BGRC has received an excellent rating in procedure, skills and parts support since the start of the contract except for October 1996 through March 1997 where they received a very good rating (Aircraft Award Brief, 1999:26). It has been identified that BGRC continues to resolve depot support equipment supportability problems in a timely manner. Additionally, the increased use of commercial parts to improve long range supportability has reduced costs. Finally, BGRC has been able to keep employee attrition rates below 5 percent (Aircraft Award Brief, 1999:7).

**Aircraft Cost Performance.** The cost performance measure indicates how Boeing manages the costs that lead to lowering total support cost to the government. The measure also identifies how Boeing adequately justifies costs that are in excess of the contract targeted costs. To receive an excellent rating Boeing's accumulated costs must be more than five percent under the estimated contract costs. Boeing must also take the initiative to identify potential cost, scheduling, and funding issues to prevent contract cost growth. Finally, Boeing must provide a full analysis of all cost reports to included a rational and thorough explanation of cost variance (Award Fee Plan for the Aircraft Guidance and Navigation Repair Program, 1997:13).

BGRC cost performance has been excellent except for the period of October 1997 through March 1998 were they received a very good rating. (Aircraft Award Brief, 1999:26). It has been identified that BGRC has made significant improvements and enhancements to cost analysis and control by an initiative to correlate cost with specific cost drivers. Additionally, costs for last period ran 5 percent under cost target. (Aircraft Award Brief, 1999:12). This resulted in better management capabilities to control cost growth.

**Program Management.** The program management performance measure consists of five sub categories: management systems, contract change management, subcontracting management, risk identification and mitigation, and management integration.

The management systems performance measure indicates how well Boeing successfully uses all management data programs and systems in producing the required management reports. To achieve an excellent rating, a quality program with an active



audit and surveillance program must be maintained to ensure products conform to technical requirements. In addition, inventory records must be accurate, and the property control system must meet all contractual requirements. Data submitted by Boeing must be timely and accurate on the first submittal (Award Fee Plan for the Aircraft Guidance and Navigation Repair Program, 1997:14).

BGRC started low in this performance measure but has recently been rated excellent over the last year. During the first period of the contract October 1996 through March 1997 this performance measure was rated as unsatisfactory (Aircraft Award Brief, 1999:26). However, noteworthy is BGRC recent effort in that government property control systems are compliant in all areas resulting in a 98 percent accurate inventory (Aircraft Award Brief, 1999:16).

The contract change management performance metric indicates how well Boeing performs changes to the repair contract. To achieve an excellent rating, Boeing must be proactive and meet contract change requirements to include high quality, complete, and accurate proposals that meet negotiated deadlines (Award Fee Plan for the Aircraft Guidance and Navigation Repair Program, 1997:15).

BGRC has received an excellent rating in contract change management since the start of the contract (Aircraft Award Brief, 1999:26). It has been recognized that communication between BGRC and Oklahoma City ALC has been exceptional and contract modifications were accomplished in a timely manner (Aircraft Award Brief, 1999:20).

The subcontracting management performance metric insures timely and accurate subcontracting cost and schedule visibility. To achieve an excellent rating problems must

be identified early and resolved quickly with no impact to the production schedule (Award Fee Plan for the Aircraft Guidance and Navigation Repair Program, 1997:15).

BGRC has received an excellent rating in the subcontracting management performance area since the start of the contract (Aircraft Award Brief, 1999:26). The proactive approach BGRC has taken with subcontracts has resulted in an improvement in cost visibility through more timely invoices (Aircraft Award Brief, 1999:21).

The risk identification and mitigation performance metric measures how well Boeing formally identifies areas of management or technical risk. To achieve an excellent rating a plan must be developed to mitigate risk as well as resolving identified in accordance with the work specification and transition plan (Award Fee Plan for the Aircraft Guidance and Navigation Repair Program, 1997:16).

BGRC has rated between satisfactory and very good in risk identification and mitigation for the first 18 months of the contract with excellent ratings for the past year (Aircraft Award Brief, 1999:26).

The management integration performance metric measures the integration of programs, systems, and functions that effects the entire repair system. To achieve an excellent rating Boeing must take advantage of existing information from program offices, associate contractors, and Defense Logistics Agency to accomplish the repair of the guidance and navigation systems. In addition, Boeing must be proactive in identifying and resolving common issues with other contractors and the government. Open lines of communication must exist between all contractor functional areas, Defense Contract Management Command, and the Air Force (Award Fee Plan for the Aircraft Guidance and Navigation Repair Program, 1997:16).

BGRC has received very good ratings in management integration over the first 18 months of the contract and received and excellent ratings for the past year (Aircraft Award Brief, 1999:26). It has been acknowledged as the repair process continues to improve, this reflects positive management integration (Aircraft Award Brief, 1999:23).

**Summary of BGRC Performance Metrics.** A summary of the BGRC aircraft performance metrics is contained in Table 13. The repair and cost performance measures have maintained either a very good or excellent rating since the beginning of the repair contract. The program management performance measures show a steady increase in performance since the beginning of the repair contract. The trend of the BGRC performance metrics is that all performance areas have risen to achieve an excellent rating over the past year of operations.

**Table 13. Summary of BGRC Aircraft Performance Metrics**

<b>Performance Measure</b>	<b>Oct-96 - Mar-97</b>	<b>April-97 - Sep-97</b>	<b>Oct-97- Mar-98</b>	<b>April-98 - Sep-98</b>	<b>Oct-98 - Mar-99</b>
<b>Repair Performance</b>					
Schedule Performance	Excellent	Very Good	Excellent	Excellent	Excellent
Field Performance	Excellent	Excellent	Excellent	Excellent	Excellent
Procedures Skills & Parts	Very Good	Excellent	Excellent	Excellent	Excellent
<b>Cost Performance</b>					
	Excellent	Excellent	Very Good	Excellent	Excellent
<b>Program Management</b>					
PM/Systems	Unsatisfactory	Satisfactory	Very Good	Excellent	Excellent
Contract Change Mgt	Excellent	Excellent	Excellent	Excellent	Excellent
Subcontract Mgt	Excellent	Excellent	Excellent	Excellent	Excellent
Risk ID and Mgt	Satisfactory	Very Good	Very Good	Excellent	Excellent
Mgt Integration	Very Good	Very Good	Very Good	Excellent	Excellent

## **Depot Maintenance Policy Changes**

Investigative question four asked how did depot maintenance policy or procedures change since the privatization of the Aerospace Guidance and Metrology Center?

Policies and procedures governing the operations of the DoD depot system have changed moderately since the privatization of the Aerospace Guidance and Metrology Center. The most important changes have been directed by the FY98/99 National Defense Authorization Acts, FY98/99 Appropriations Acts, The 1998 DoD Logistics Strategic Plan, Under Secretary of Defense for Acquisitions and Technology Policy Memorandums, and the DoD Directive 5000.2.

**Depot-Level Maintenance and Repair Definition.** The National Defense Authorization Act for FY 98 provided a revised definition of what is to be considered as depot-level maintenance and repair. In general, “depot-level maintenance and repair” is defined as material maintenance or repair requiring the overhaul, upgrading, or rebuilding of parts, assemblies, or subassemblies, and the testing and reclamation of equipment as necessary. The important definition change in the 1998 National Defense Authorization Act concerns the inclusion of interim contractor support (ICS) or contractor logistics support (CLS) in support of depot maintenance (Defense Depot Maintenance Council Business Plan, 1998:7).

Changing the definition of what is considered depot-level maintenance and repair may appear miniscule, but digging deeper into this definition can lead to a better understanding. The inclusion of the interim contractor support and contractor logistics support was a strategic move by the Depot Caucus. Most of this work is already accomplished by private contractors and would push the Defense Services closer to the

50 percent maximum contractor ceiling. This will prevent the movement of additional workload from the organic military depots to the private contract sector (Gorman, 1999).

The National Defense Authorization Act for FY 99 again "clarified" the definition of depot-level maintenance and repair. The definition now includes a provision pertaining to location. The location, whether at a public or private depot repair facility, at which the maintenance or repair is performed is not a limitation to competing depot workload (Defense Depot Maintenance Council Business Plan, 1998:5).

The trend of depot maintenance repair operations not performed at a defense depot required the legislation to be modified to include facilities that are not primarily organic depot maintenance activities (Gorman, 1999). This ensured that workloads performed by a private contractor, at their facility, was counted as depot maintenance per the 50/50 rule.

**Core Logistics Capabilities.** Core logistic capabilities have been an area for debate since the outsourcing and privatization initiatives started. How much of the repair depot operations should remain organic to the DoD? Section 356 of the National Defense Authorization Act for FY 98 addressed core logistics capabilities. This section requires that the Secretary of Defense to identify core logistics capabilities and workloads to maintain organically these capabilities. Core logistics capabilities include the capabilities which are necessary to ensure a ready and controlled source of technical competence and resources necessary to ensure effective and timely response to a mobilization, national defense contingency situations, and other emergency requirements.

Most significant in this section is that performance of workloads to maintain core logistics capabilities must be performed organically, not in the private sector. DoD is

required to maintain core logistics capabilities at government-owned and government-operated (GOGOs) facilities. The GOGOs are required to ensure cost efficiency and technical competence in peacetime, while preserving the surge capacity and reconstitution capabilities. Section 356 also extends the limitation on contracting, stating that performance of workload to support core logistics capabilities may not be contracted for performance by non-government personnel. (Defense Depot Maintenance Council Business Plan, 1998:8).

This section in the National Defense Authorization Act for FY 98 basically retains organic depot facilities, thus keeping thousands of jobs in several states secure. The capabilities provision on four years after achieving initial operational capabilities was included because of the C-17 flexible sustainment contract. The C-17 flexible contract gave the depot maintenance to the original equipment manufacturer, Boeing, for the life of the system (Gorman, 1999).

**60/40 to 50/50 Rule.** Section 357 of the National Defense Authorization Act for FY98 increased the percentage of depot-level maintenance and repair that may be contracted for performance by non-government personnel from 40 percent to 50 percent. Thus, beginning with FY 98, not more than 50 percent of the funds made available to a armed service or defense agency for depot-level maintenance may be used to contract for performance of depot maintenance by non-government personnel (Defense Depot Maintenance Council Business Plan, 1998:8).

The “50/50 rule” on the surface seems to make available an additional 10 percent of non-core repair to be competed to private contractors. However, going back to the definition of what is considered depot maintenance repair is important. Because interim

contractor support and contractor logistic support where already accomplished by a private contractor, and now counted as depot maintenance, the 50/50 ruling is somewhat negated.

**Competitive Procedures.** Section 359 of the National Defense Authorization Act for FY98 amends Title 10, USC, by inserting a new section, Section 2469a, "Use Of Competitive Procedures in Contracting for Performance of Depot-Level Maintenance and Repair Workloads Formerly Performed At Certain Military Installations." In essence, this section presents the competitive procedures that must be adhered to for workload shifts required as a result of the 1995 Base Closure and Realignment process.

The law applies to any depot-level maintenance and repair workload performed as of 1 January 1997, and is proposed to be converted from performance by DoD personnel to performance by a private sector source.

This section also imposes conditions for solicitation of bids, most importantly it requires the consideration of both public and private bids. It requires that source selection must include fair market value of any provided land, plant or equipment from a military installation to a private offerer; and total direct and indirect costs and savings. Further, this law requires equal treatment of depreciation, allows for performance at any location, as well as teaming by both public and private entities, and forbids preference to offerers for performance of workloads in-place or any other single location (Defense Depot Maintenance Council Business Plan, 1998:9).

This legislation came to surface from the closure of Sacramento and San Antonio ALCs. The original plan in the President's BRAC 95 directive was to privatize both depots in place. It was the intent to privatize the workload in place through private-

private competition. However, after being reminded the "\$3 million law" requires public-private competition in depot maintenance repair, the depot workload was competitively competed. At one point in the San Antonio ALC closure process, Oklahoma City ALC was told it could not team with a private contractor to compete for the depot repair workload (Gorman, 1999). The competitive competition legislation as stated allows for teaming and enabled Oklahoma City ALC to team with Boeing for an aircraft workload package.

A key competition policy document is the 2 May 1997 memorandum from the Under Secretary of Defense for Acquisition and Technology. The policy states that organic DoD maintenance depots are eligible to participate in public-private competitions for depot-level workloads not necessary to sustain core capabilities. Market analysis is required for competitions, and the provisions of Title 10 sections 2466 (50/50) and 2469 (\$3M) apply. The competition policy requires an "arms length" relationship with competing depots and that the government communicates equally with all offerers. The competition must ensure that maximum cost comparability of proposals is included and that public depots must have well documented accounting procedures for direct and indirect costs. These procedures must be auditable by the Defense Contract Audit Administration (Defense Depot Maintenance Council Business Plan, 1998:11).

This policy memorandum was driven by the experiences at Sacramento and San Antonio ALCs during the initial privatization-in-place process. Once it was determined that the privatization-in-place was not going to happen, these procedures were drafted. These procedures addressed some of the past criticisms of public-private competitions (Gorman, 1999).



**Personnel End Strength.** Section 360 of the National Defense Appropriations Act for FY 98 amends Section 2472(a) of USC Title 10. It now states that civilian employees of the DoD, including the civilian employees of the military departments and the defense agencies may not be managed on end strength numbers. Any civilian employee involved in the performance of depot-level maintenance and repair workloads may not be managed on the basis of any constraint or limitation in terms of man years, end strength, full-time equivalent positions, or maximum number of employees (Defense Depot Maintenance Council Business Plan, 1998:9).

The notion is that depots are to be staffed as workload volume dictates. However, over the past ten years, various personnel ceilings have been levied within DoD and the services. The purpose of this legislation is to prevent such a ceiling as being cited as the reason for not increasing employment at a depot to handle anticipated workload. The net effect is that if a depot does hire more people, some organization within the service must lose people in order for that service to comply with whatever ceiling has been levied upon it (Gorman, 1999).

**Centers of Industrial and Technical Excellence.** Section 361 of National Defense Authorization Act for FY 98 amends Chapter 146 of USC Title 10 by adding a new section (2474), Centers of Industrial and Technical Excellence (CITE). The Secretary of Defense is required to designate each depot-level activity of the military departments and the defense agencies as a CITE in the recognized core competencies of the activity.

Under this new section, each military department and defense agency must reengineer industrial processes and adopt best-business practices at their depot-level

activities in connection with their core competency requirements. Each CITE will serve as recognized leaders in their core competencies throughout the DoD and in the national technology and industrial base. Additionally, each CITEs can enter into public-private cooperative arrangements for the performance of depot-level maintenance and repair at the CITEs. Finally, section 2474 includes measures to enable a private sector entity that enters into a partnership arrangement or leases excess equipment and facilities at a CITE, to perform additional work at the CITE outside of the types of work normally assigned to the CITE (Defense Depot Maintenance Council Business Plan, 1998:10).

The driving force behind naming the organic depot facilities as CITEs is to solidify the existence of organic depots in the face of the Under Secretary of Defense for Acquisitions and Technology who wants to eliminate organic depots. However, to date no CITEs have been designated because the Services and the Under Secretary of Defense for Acquisitions and Technology can not agree on what capabilities constitute core, and the depots are to be designated as CITEs in their “recognized core competencies” (Gorman, 1999).

**Commercial Items.** Section 343 of the National Defense Authorization Act for FY 99 pertains to the determination of military items being commercial items for purposes of the exception to requirements regarding core logistics capabilities. The mandate to maintain core logistics capabilities has an exemption for commercial items. Section 343 amends Section 2464 of Title 10 USC by adding a new subsection to establish justification requirements for military equipment or weapon systems determined to be commercial items for the purposes of the exception. Section 343 states that when applying the commercial item exception, a commercial item is to be established by the

Secretary of Defense submitting to Congress a notification of the determination and the justification of the determination. (Defense Depot Maintenance Council Business Plan, 1998:5). The Under Secretary of Defense for Acquisitions and Technology has argued that if an item is Commercial-of-the-shelf (COTS), the rationale for having a core capacity for that item is contradictory (Gorman, 1999). Since there is sufficient commercial repair capability in the private sector, organic capabilities are excessive.

**Prime Vendor Contracts.** Section 346 of the National Defense Authorization Act for FY 99 sets conditions for expanding the use of prime vendor contracts for depot-level maintenance and repair of weapon systems and military equipment. This section states that prime vendor contracts may not be entered until Congress receives a report describing the competitive procedures used to award the prime vendor contract. The report must contain an analysis of costs and benefits that demonstrates that use of the prime vendor contract will result in savings to the government over the life of the contract.

Under this section, a "prime vendor contract" means an innovative contract that gives a defense contractor the responsibility to manage, store, and distribute inventory, manage and provide services, or manage and perform research, on behalf of the DoD on a frequent, regular basis (Defense Depot Maintenance Council Business Plan, 1998:6).

The specific impetus for this legislation is the Army's proposed "Team Apache" contract that will give lifetime support for the Apache helicopter to a consortium of three contractors on a sole-source basis. This legislation also maintains a baseline of vendors able to submit for contracts for workloads. This also limits the use of contractor logistics

support and prevents the government from being "sold short" on sole source lifetime contracts (Gorman, 1999).

**Reserve Components.** Section 8106 of the Defense Appropriation Act for FY 99 requires the Secretary of Defense to submit an analysis to the congressional defense committees on Reserve Components depot activities. An in-depth analysis comparing the cost of any proposed establishment or expansion of depot facilities by the Reserve Components to the cost of performing the same work at existing depot facilities or by the private sector (Defense Depot Maintenance Council Business Plan, 1998:7).

With the concentration of eliminating non-core activities from defense depots and maximizing in-place capacity, it is expected that the Reserve Components fall in line with current depot policy initiatives.

**1998 DoD Logistic Strategic Plan.** The 1998 DoD Logistic Strategic Plan, 7 January 1998, delineates several depot maintenance-specific policies that emphasize making optimum use of the total industrial base supporting depot-level maintenance.

The plan calls for the total maintenance infrastructure to be restructured over time. The Office of the Secretary of Defense (OSD) policy is to pursue opportunities for eliminating public sector maintenance infrastructure through increased competitive sourcing, greater consolidation, and aggressive re-engineering of activities across all levels of maintenance. The plan also calls for the discontinuance of transfers of workloads from the private sector to the public sector except where required for reasons of national security.

The DoD will pursue efficient use of public sector maintenance depots through improved capacity utilization. To achieve this, public sector (organic) capacities will be downsized with increased private sector material support, reduced cycle times and reduced inventory storage points. The 1998 DoD Logistic Strategic Plan states that the DoD will pursue public-private competitions for depot-level maintenance and repair workloads accomplished by federal government personnel to the maximum extent allowed by statute. The policy is for the services to use competition to achieve the most effective use of both public and private sectors for the accomplishment of workloads, but will do so within the statutory levels established by Section 2466 of Title 10 concerning the 50/50 rule (Defense Depot Maintenance Council Business Plan, 1998:11-12).

This policy essentially is the “starting point” for the end of the defense depot system, as it has been known for the past several decades. The next step will be for the 50/50 rule to be changed to the 40/60 rule, in favor of the private sector.

**Total Logistics Support of New Weapon Systems.** The DoD 5000.2-R, Mandatory Procedures for Major Defense Acquisition Programs and Major Automated Information Systems, states that it is DoD policy to retain capabilities to provide effective and timely response to surge demands, ensure competitive capabilities, and sustain institutional expertise. Support concepts for new and modified systems shall maximize the use of contractor-provided, long-term, total life-cycle logistics support that combines depot-level maintenance for non-core related workload. Best value over the life-cycle of the weapon system and use of existing contractor capabilities, particularly while the system is in production, shall be key determinants in the overall decision process. (Defense Depot Maintenance Council Business Plan, 1998:12).

DoD guidance again has aimed at eliminating the organic depot maintenance capacities. The emphasis on using a private contractor for new weapons systems will eventually leave the public depots with little workload with the phase-out of older weapon systems. Table 14 summarizes the major changes in depot policy.

**Table 14. Summary of Depot Policy Changes**

Depot Policy Change	Effect
Depot level Maintenance and Repair Definition	Inclusion of interim contractor support (ICS) or contractor logistics support (CLS)
Core Logistics Capabilities	Services have to define their core capabilities
60/40 to 50/50 Rule	Increase in amount of funds that can go to private sector depot repairs
Competitive Procedures	Competition of workloads must be competitive and certified
Personnel End Strength	Civilian depot personnel not managed on end strength
Centers of Industrial and Technical Excellence	Core capabilities identified with a single depot facility
Commercial Items	Commercial items not considered a core capability
Prime Vendor Contracts	Prevents one contractor from dominating a workload
Reserve Components	Stops the Reserves from building own depot system
1998 DoD Logistic Strategic Plan	Elimination of public sector depots over time
Total Logistics Support of New Weapon Systems	Focuses on private contractors to support new weapon systems

## **V. Conclusions and Recommendations**

### **Chapter Overview**

The purpose of this study was to examine several aspects associated with the privatization of the Aerospace Guidance and Metrology Center at Newark AFB and examine how depot policy changes have occurred since the privatization . Specifically, the initial justification that concluded privatizing the workload would reduce excess depot capacity along with cost savings was researched. Additionally, a comparison of performance metrics of organic versus private operation of the depot was examined to investigate the performance of each sector. Finally, defense depot maintenance policy changes that will have an impact on depot operations of the future were examined.

Each investigative question will be restated followed by conclusions drawn from the data and recommendations for future action.

### **Investigative Question One.**

How did the privatization of the Aerospace Guidance and Metrology Center at Newark AFB reduce the excess depot capacity within the Air Force?

**Conclusion.** At the time of the decision to close Newark AFB and privatize the depot operations, it was determined the Air Force had 8.9 million hours of excess depot capacity. However, the data supplied from several sources indicate the maintenance repair depot at Newark did not incur the claimed 1.7 million hours of excess depot capacity. In fact, examining the workload and capacity data between 1986 and 1991 AGMC had a capacity utilization of 119 percent - working over capacity, not excess. In

comparison, the Sacramento ALC depot during the same period had a capacity utilization of 87 percent.

In examining the data the author noticed that in FY 91 the actual workload amounted to approximately 1.7 million hours. It is this author's suggestion that this figure was taken from the workload and capacity data, from an inexperienced staff worker, and mistakenly labeled as excess depot capacity. This figure then was exploited in the BRAC political process of closing an Air Force depot. This suggestion is highlighted in the words of Colonel Joseph Renaud, Commander of AGMC in 1993, "I think the command offered up Newark AFB as the token something" (Fisher, 1996).

**Recommendation.** It appears the justification to close Newark AFB and privatize the depot repair workload was not correct. However, keeping the Newark depot off the BRAC 95 list would have been virtually impossible due to both San Antonio and Sacramento ALC's recommend for closure. The recommendation to close such a huge complex that effects thousands of lives needs to be carefully analyzed and verified before proceeding to closure. Misunderstood definitions and misusing information can lead to making possibly the wrong decision that can include undesirable results. It is this author's recommendation that in any project as complex as privatizing or closing an Air Force depot, the assumptions and justifications need to be certified by multiple sources.

### **Investigative Question Two**

Is the contractor operated Boeing Guidance Repair Center more costly than when the government operated the repair depot?



**Conclusion.** Cost studies completed by Ogden, Oklahoma City, and Warner Robins ALCs all indicate the costs associated with private contract operations are most likely \$16.7 million more per year. It is important to understand that many costs not associated with organic operations are required to be included with a private contractor operation. These costs included contract oversight and administration, contract award fee, and lease costs.

The evolution of determining what costs are associated with privatizing a depot operation have been highlighted by the AGMC privatization. The cost comparability handbook that is used to compare public versus private sector costs had been changed several times and completely revised in January 1998. This ensures a precise comparison when depot workload is competed against the public and private sector.

It is important to note the cost studies included in this thesis indicate it costs millions more to operate the repair facility under Boeing, but Boeing continues to receive high marks in for their cost program (see pages 58,62 and Table 13). How can this be? The reasoning behind this is, at the time the contract was awarded to Boeing it was determined a good estimate on what the costs were. The contract to Boeing was award based on these cost figures and they measure themselves against this figure. As the evolution of the privatization of depot workload continued, it was identified that additional costs such as award fees, contract oversight, and lease agreements must be included in the "total cost".

The "lost" 1995 cost analysis conducted by AFMC that concluded privatization would save \$5 million a year is key to this privatization. Without this document, the assumptions and factors used in the determination that privatization will never be known.

Not only did it cost approximately \$16.7 million more to operate the depot in FY 97; the privatization transition costs and Newark closure costs have approached \$70 million dollars, so far. All of this was accomplished in the name of saving taxpayers money by reducing excess depot capacity. However, the cost analysis indicate the privatization has been at the expense of the taxpayer. The statement by the AFMC/CC General Yates, "This is not about saving money, it is about closing a base," reflects the intense pressure to close Newark AFB, no matter the cost.

**Recommendation.** Certification procedures applicable to competing depot level workloads were incorporated by changes in the BRAC 95 legislative statutes. It is reasonable to recommend that all pre-1995 BRAC decisions be analyzed to determine if reduced costs have materialized. If costs have increased, action on these activities needs to be accomplished.

### **Investigative Question Three**

How did the performance metrics of the depot maintenance repairs change under contractor operations? Are the performance metrics better when the government operated the repair depot or are the performance metrics better under a private contractor?

**Conclusion.** The data concerning the performance metrics at AGMC before privatization suggests a trend toward declining performance. Several factors could explain why this trend occurred. First, as the data established, the workload at AGMC was declining which can be contributed to the workload of the Minuteman II missile was phased out of service. Second, after Newark was spared from the 1991 BRAC process

the "stamp" of BRAC was placed on AGMC and was no longer a priority in the depot arena. Finally, after Newark was recommended for closure the emphasis shifted from operating a depot to closing an Air Force Base and transitioning the repair depot to a private contract.

The BGRC metrics have continually improved since the start of the contract to the point all areas were rated excellent over the past year of operations. The underlying question is how does the performance of the two operations compare? A quick look at the data would clearly indicate that BGRC operations are performing much better than when the repair workload was accomplished by AGMC. However, this may not be the case for the performance metrics for each repair operation has different basic factors and assumptions. A true "Apples to Apples" comparison of the performance metrics cannot be made concerning AGMC and BGRC. The performance metrics for AGMC are based on the Handbook for Depot Maintenance Operation Indicators criteria that was developed for fixed price operations that could be applied universally to all DoD depots. Contrary, BGRC is a cost plus award fee contract with specially tailored performance metric plan for their specific operations. Jerry Pratt (1999), the Program Integrator at DCMC-Newark stated, "To make any kind of comparison, even a remote comparison, you would have to make many, many, many assumptions about the environment that AGMC operated in versus the current BGRC contractual environment." This statement from one of the foremost knowledgeable people concerning the depot repair operations at AGMC/BGRC highlights the inability to make a true comparison.

**Recommendation.** As the data revealed, BGRC has received an excellent rating in all performance areas for the past year and has little room to improve. The current

contract is a cost plus award fee type which places most of the cost burden on the government. Now that the private contractor has operated the depot for several years and has avoided most the potential cost risks associated with the initial transition, it is time for the a fixed price type of contract is negotiated with Boeing.

#### **Investigative Question Four**

How did depot maintenance policy or procedures change since the privatization of the Aerospace Guidance and Metrology Center?

**Conclusion.** The results in chapter four clearly indicate numerous changes have been made in depot policy since the AGMC privatization. The overarching theme in the changes can be traced to two schools of thought. First, the politicians whose political boundaries include the three remaining organic depots want to secure the status, of organic depots, into the distance future. This would benefit the politicians and their constituents by keeping high paying government jobs in their districts. The Office of the Secretary of Defense maintains the second school of thought. Guidance stemming from this office wants to let the private sector market economy support more non-core and eventually all the defense depot maintenance workloads. This would enable the DoD to focus more on the remaining warfighting capabilities throughout the military.

An example of how the two sides translated their desires into a depot policy change. The previous 60/40 rule mandated that only 40 percent of funds could be spent on private sector depot maintenance. The OSD implemented changes to this that allowed a 50/50 funding between organic and the private sector. The depot caucus, politicians

with deep depot interests, countered this policy change with a redefinition on what repair workloads were considered depot repair workloads. The depot caucus championed a legislative act that changed the definition to include interim contractor support (ICS) and contractor logistics support (CLS). The significance of this is that private contractors already accomplished the ICS and CLS workloads, so the new 50/50 rule was somewhat nullified by this change.

**Recommendation.** Defense depot policy will continue to evolve in corresponding with what emphasis the OSD or depot caucus deems beneficial to their desires. In examining whether the workload should be accomplished by the public (organic) or private sector, a “total systems” approach should be used. With the total system encompassing the United States, it shouldn’t matter in what state or who accomplishes the workload. It should matter that the workload is accomplished by the sector that does the best job utilizing the minimum resources.

## **Chapter Summary**

The four investigative questions have been researched and have concluded the following: the initial recommendation to close Newark AFB was flawed, it has cost approximately \$70 million more to operate the depot under a private contractor, a true comparison of performance metrics between AGMC and BGRC cannot be made due to the differences in basic operating principles, and that depot maintenance policy is shifting toward eliminating public (organic) repair depots.

The future of BGRC will have to contend with the loss of the Peacekeeper ICBM from service, the Guidance Replacement Program (GRP) for the Minuteman III, and the

continual increases in the reliability of new aircraft guidance systems. All of these factors will place extreme pressures on the depot repair operations and only time will tell what the outcome will be at the Boeing Guidance Repair Center.

### **Recommendations for Future Research**

The privatization-in-place of the AGMC repair depot was the first of its kind. Currently, there are no other DoD repair depots undergoing a privatization-in-place (PIP) process to determine if a “second generation” PIP would be more successful in dollar costs than AGMC. However, numerous other support activities throughout the DoD have been privatized and researching if the anticipated costs have actually materialized would help determine future privatization efforts.

The repair depots at Sacramento and San Antonio ALCs have just recently finished competing their depot workloads to the remaining DoD depots and several private sector contractors. Research into how the depot transition process was accomplished at Sacramento and San Antonio could help future DoD depot downsizing.

Now, several years after the first round of outsourcing and privatization projects have been completed, researching the effects of outsourcing and privatization on active duty units could help in future decisions to reduce infrastructure.

### Appendix A: Ogden ALC Missile Repair Costs

Missiles Repair	AGMC	BGRC
Repair	\$5,860,435	\$20,051,918
Lease	-	\$3,114,664
Award Fee	-	\$2,145,652
Materials	\$9,036,769	\$9,036,769
Overhead Costs	\$5,135,759	\$725,346
General and Administrative	\$3,362,156	-
Unprogrammed Work	\$1,673,613	\$1,673,613
<b>SubTotal:</b>	<b>\$25,068,732</b>	<b>\$36,747,962</b>
<b>Cost Adjustments:</b>		
<b>AGMC</b>		
BOS Adjustment	\$6,594,460	-
Gov't Organic PMS	\$60,351	-
Unfunded Civilian Retirement Benefits	\$896,528	-
State Unemployment Payments	\$87,885	-
Casualty Insurance	\$50,205	-
Impact Aid	\$5,120	-
Retiree Health Benefits	\$325,787	-
Depreciation for MCP Facilities	\$176,675	-
DFAS Support	\$321,313	-
Dispensary	\$90,914	-
Information Services	\$200,994	-
<b>SubTotal:</b>	<b>\$8,810,232</b>	<b>-</b>
<b>BGRC</b>		
Equipment Depreciation	-	\$1,353,277
Travel	-	\$150,000
Capital Improvements	-	\$444,000
DMBA Contract Administration Fee	-	\$658,363
Privatization (PKT/DCAA/DCMC)	-	\$969,103
Security and Medical	-	\$723,786
<b>SubTotal:</b>	<b>-</b>	<b>\$4,298,529</b>
<b>Missile Total:</b>	<b>\$33,878,964</b>	<b>\$41,046,491</b>

**Appendix B: Oklahoma City Aircraft Repair Costs**

<b>Aircraft Repair</b>	<b>AGMC</b>	<b>BGRC</b>
Repair	\$16,622,761	\$22,472,115
RLG SRU Repair	-	\$2,121,602
Material (GFM/CAP)	\$8,744,314	\$8,744,314
Lease	-	\$2,929,262
Award Fee	-	\$2,489,227
Government O/H	-	\$725,346
<b>SubTotal:</b>	<b>\$25,367,075</b>	<b>\$39,481,865</b>
<b>Cost Adjustments:</b>		
<b>AGMC</b>		
BOS Adjustment	\$8,688,420	-
Gov't Organic PMS	\$132,702	-
Unfunded Civilian Retirement	\$1,141,036	-
State Unemployment Payments	\$124,823	-
Casualty Insurance	\$63,898	-
Impact Aid	\$6,516	-
Retiree Health Benefits	\$414,637	-
Depreciation for MCP Facilities	\$177,623	-
DFAS Support	\$413,487	-
Dispensary	\$116,995	-
Information Services	\$258,652	-
<b>SubTotal:</b>	<b>\$11,538,789</b>	<b>-</b>
<b>BGRC</b>		
Equipment Depreciation	-	\$1,722,353
Travel	-	\$100,000
Capital Improvements	-	\$458,640
Privatization (PKT/DCAA/DCM	-	\$1,387,336
<b>SubTotal:</b>	<b>-</b>	<b>\$3,668,329</b>
<b>OC-Aircraft Total:</b>	<b>\$36,905,863</b>	<b>\$43,150,193</b>
F-4/F16 Repair	\$655,728	\$599,337
Navy DMINS Repair	\$907,087	\$1,413,214
<b>Grand Total:</b>	<b>\$38,468,838</b>	<b>\$45,162,744</b>



### Appendix C: Warner Robins Metrology Privatization Costs

Metrology Privatization	AGMC	WYLE
Laboratory Operations	\$4,583,763	\$6,813,871
Lease Costs	-	\$2,642,749
Award Fee	-	\$258,950
Equipment Maintenance & Material	\$989,165	-
Government Furnished Material	-	\$27,948
<b>SubTotal:</b>	<b>\$5,572,928</b>	<b>\$9,743,518</b>
<b>Cost Adjustments:</b>		
<b>AGMC</b>		
BOS Adjustment	\$2,337,879	-
Unfunded Civilian Retirement Benefits	\$377,942	-
State Unemployment Payments	\$28,431	-
Casualty Insurance	\$58,384	-
Impact Aid	\$1,302	-
Other Personnel Costs (Military)	\$160,006	-
Retiree Health Benefits	\$137,513	-
Other Support Services	\$157,639	-
<b>SubTotal:</b>	<b>\$3,259,096</b>	
<b>WYLE</b>		
Equipment Depreciation	-	-
Travel	-	-
Privatization (AFMETCAL/DCAA/DCMC)	-	\$979,277
<b>SubTotal:</b>	<b>-</b>	<b>\$979,277</b>
<b>Total:</b>	<b>\$8,832,024</b>	<b>\$10,722,795</b>

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## Vita

Captain Richard H Fillman Jr. was born on 8 October 1968 in Des Plaines, Illinois. Shortly thereafter his family moved to the Upper Peninsula of Michigan where he attended and graduated from Newberry High School in 1986. He enlisted in the Air Force under the delayed entry program and entered active duty in February 1988. In July 1988, he graduated from Nuclear Weapons Specialist training as a Distinguished Graduate at Lowry AFB, Colorado.

Rich's first assignment was at Vandenberg AFB, California as a Minuteman III weapons specialist assigned to the 394<sup>th</sup> Test Maintenance Squadron. After separating from the service he earned an Associates of Science Degree with High Honors from Lansing Community College in 1991. He entered undergraduate studies at Michigan State University in East Lansing, Michigan where he graduated with a Bachelor of Science degree with honors in Biological Sciences. Rich was commissioned through the Detachment 380 AFROTC at the University where he was recognized as a Distinguished Graduate and received a Regular Commission after Congressional approval.

His first assignment as a commissioned officer was at MacDill AFB, Florida in September 1993. He was assigned to the 6<sup>th</sup> Transportation Squadron as the vehicle operations officer. A remote tour at Osan AB, Korea began in May 1997 until he PSCd to enter the Graduate Transportation Management program at the Air Force Institute of Technology. Upon graduation, he will be assigned to HQ Air Force Space Command, Peterson AFB, Colorado.

Permanent Address:

202 W. Willow St  
Newberry, MI 49868

REPORT DOCUMENTATION PAGE			Form Approved OMB No. 0704-0188	
Public reporting burden for this collection of information is estimated to average 1 hour per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. Send comments regarding this burden estimate or any other aspect of this collection of information, including suggestions for reducing this burden, to Washington Headquarters Services, Directorate for Information Operations and Reports, 1215 Jefferson Davis Highway, Suite 1204, Arlington, VA 22202-4302, and to the Office of Management and Budget, Paperwork Reduction Project (0704-0188), Washington, DC 20503.				
1. AGENCY USE ONLY (Leave blank)		2. REPORT DATE September 1999		3. REPORT TYPE AND DATES COVERED Master's thesis
4. TITLE AND SUBTITLE THE PRIVATIZATION OF THE AEROSPACE GUIDANCE AND METROLOGY CENTER AT NEWARK AIR FORCE BASE				5. FUNDING NUMBERS
6. AUTHOR(S) Richard H. Fillman Jr., Captain, USAF				
7. PERFORMING ORGANIZATION NAME(S) AND ADDRESS(ES) Air Force Institute of Technology 2750 P Street WPAFB OH 45433-7765				8. PERFORMING ORGANIZATION REPORT NUMBER
9. SPONSORING/MONITORING AGENCY NAME(S) AND ADDRESS(ES)				10. SPONSORING/MONITORING AGENCY REPORT NUMBER
11. SUPPLEMENTARY NOTES				
12a. DISTRIBUTION AVAILABILITY STATEMENT Approved for public release; distribution unlimited				12b. DISTRIBUTION CODE
13. ABSTRACT (Maximum 200 words) <p>The Aerospace Guidance and Metrology Center (AGMC) at Newark AFB was privatized-in-place as a result of the 1993 BRAC process. This was a first of a kind for the DoD repair depot system. The justification was too much excess depot capacity and by closing Newark the Air Force would rid itself of this excess capacity and obtain savings by privatizing the repair workload.</p> <p>This thesis concentrates on whether excess capacity at AGMC was as large as it was identified and if cost saving had materialized at the depot since the privatization. To determine how well the depot repairs were accomplished, performance metrics were examined before and after the privatization occurred. With the trend of privatization in the DoD depot system, many depot policy changes have occurred since the AGMC privatization.</p> <p>This research suggests the justification presented for closing Newark and privatizing AGMC was not accurate, the costs to operate the privatized depot is has cost the taxpayers \$70 million more then if the depot would have remained organic, and how recent legislative changes are leading to a preference for private industry to perform all depot level maintenance.</p>				
14. SUBJECT TERMS Depot Privatization, Privatization in Place, Depot Maintenance Policy, Base Closure, Base Realignment and Closure Commission, Outsourcing, Department of Defense Privatization				15. NUMBER OF PAGES 102
				16. PRICE CODE
17. SECURITY CLASSIFICATION OF REPORT UNCLASSIFIED		18. SECURITY CLASSIFICATION OF THIS PAGE UNCLASSIFIED		19. SECURITY CLASSIFICATION OF ABSTRACT UNCLASSIFIED
				20. LIMITATION OF ABSTRACT UL

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